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October, 1917

**MOTOR
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Military Type Express Cruisers

Craft silent of motor—palatial in accommodations—distinguished by a pervading atmosphere of quiet refinement. Craft of great speed—abundant in power—built strong to wage successful combat against Neptune's angriest moods. The peer of this Military Express Type does not exist. For long cruises the maximum of comfort is assured. For use in Southern waters the provision for ventilation in combination with moderate draft makes them peculiarly well adapted. For convenience of operation their one man control permits of the minimum of attention.

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Great Lakes Boat Building Corporation, Milwaukee, Wis.
Designers and Builders of Boats of Distinction and Quality

SHOEPEN

MOTOR BOATING

Hawk Eye II, with George Reiss at the wheel, coming up the home stretch at the Minneapolis races

Racing for the Gold Cup

The Fifteenth Series of Races for the Trophy of the American Power Boat Association Representing the Championship of North America—World's Speed Record is Again Broken

By Charles F. Chapman

Photographs by Rosenfeld and the Writer

LOGS, floating drift, refuse, venders of peanuts and ice cream cones, swimmers, canoeists, brass bands, grand stands and one western motor boatman greeted the contestants and followers of hydroplane races at Minneapolis in August at the Gold Cup Races of 1917. It is hard to recall what was not scheduled to attract the crowd that was expected to fill the mammoth grand stands built to give the inhabitants a good chance to see the fastest boats in the world, which were expected to perform for their amusement. But the crowd didn't worry because the location of the grand stand was rather far away from the race course, for completely surrounding the new dam on the Mississippi between St. Paul on the south, and Minneapolis on the north, on which the course was laid out is a most perfect natural amphitheatre, with high banks, leading directly down to the water's edge within a few yards of the course. Here a clear and almost

unobstructed view of the whole proceedings was to be had and the people to the number of 200,000, so the papers said, took advantage of what nature had provided for them. They came early, brought their lunch and sat patiently for hours, expecting something to happen. For two days they sat before anything happened—if you can call a race for the Gold Cup anything.

As is the western custom, great preparations were made for the events, which had been announced ever since the 1916 races in Detroit. Those in charge promised that they would surpass anything which the world had yet known. The city

was placarded as though it was to have the annual visit of a three-ring circus. Large committees were appointed, new roads built leading to points of vantage along the course, a tiny reviewing stand built, said to be erected particularly for the Park Commissioners and their guests, etc., etc., as is the wont and proper procedure for the

Fifteenth Race for the American Power Boat Association Gold Challenge Cup—Mississippi River, August 25, 26 and 27, 1917. (3 heats; 30 nautical miles each.)

		1917 WINNER		1916 WINNER	
Winning Boat, 1917		OWNER	TIME	SPEED	S.M.P.H.
First heat, Miss Detroit II	G. A. Wood	40:59	50.7	44:41	46.2
Second heat, Miss Detroit II	G. A. Wood	36:59	56.3	41:46	49.5
Third heat, Miss Detroit II	G. A. Wood	36:47	56.5	41:20	50.0
Total race, Miss Detroit II	G. A. Wood	1:54:45	54.14	2:07:48	48.6

Fastest Lap (6 nautical miles)

First heat, Miss Detroit II	G. A. Wood	7:51	52.74	•	51.20
Second heat, Miss Detroit II	G. A. Wood	6:58	59.43	•	55.35
Third heat, Miss Detroit II	G. A. Wood	6:58	59.43	•	55.78

Previous Gold Cup Record for One Heat of 30 Nautical Miles

Made by Baby Speed Demon II at Lake George in 1914—Time, 41:03; Speed, 50.49 statute miles per hour.

Previous Gold Cup Record for Three Heats, 90 Nautical Miles

Made by Baby Speed Demon II at Lake George in 1914—Time, 2:06:35; Speed 49.12 statute miles per hour.

Fourth Race for the A. P. B. A. Mil: Championship of North America and Challenge Cup—Mississippi River, August 28th, 1917 (1 nautical mile)

Average of Six Runs, 1917

Miss Detroit II—53.626 knots=61.724 statute m.p.h.
*The course in 1916 was 5 nautical miles to the lap instead of 6 nautical miles as in 1917.

Best Previous A. P. B. A. Record

Miss Minneapolis (1916) 61.083 statute miles per hour.

production of a hippodrome performance with its side shows.

But lo and behold every last one of the officials, of which there were so many said to be appointed, and all of those large citizen committees which never do amount to a row of pins, forgot that there was to be a hydroplane race. Apparently it never occurred to any of them, as far as could be discovered, that the reason for all this proposed hilarity was the fact that the races for the greatest and most important motor boat trophy in the world—the American Power-Boat Association Gold Cup—was to be competed for. Surely none of all the events which were planned were given less publicity. That publicity which the races did receive in advance was purely of a sensational nature. It was the thrills which the spectators would feel, the great dangers attached to the races, a tip over or two and perhaps a drowning which they would witness with their own eyes which were featured in the advance publicity.

The chief center of interest seemed to be "See the Torpedo in Ac-

"Course absolutely impossible, speed greater than fifty miles positively dangerous to life, not to mention boats. Apparently nothing done beyond erection of grand stand and placarding city. No arrangements for accommodation of boats and all-but impossible to get them on course. Only consideration visible is that for gate receipts and no appreciation of what the contest means or stands for. Is being turned into an advertising hippodrome for cash. Believe it should be stopped to prevent injury to the sport. None of committee around."

This gave us a pretty good idea as to what to expect when



Miss Minneapolis, the defender of the trophy, which proved to be too slow to hold her own against Miss Detroit II



Hoisting Miss Detroit II out of the water to inspect the damage done by logs

tion" and the "Surf Riders." The former, which it was explained was to be a regular and genuine torpedo launched from an aeroplane according to the arrangement suggested by Rear Admiral Fiske, never did put in an appearance, not to mention getting into action. As far as could be discovered it was just a ruse to attract the crowd. They fell for it, hook, line and sinker, even though it was 100 per cent. bunco. And the Surf Riders—we, from the waters of sodium chloride, wondered much how surf could be rolling 1,500 odd miles from its source and watched with much interest for the appearance of the "Surf Riders" from Red Wing. Unlike the torpedo in action, they came with all their apparatus under their arms, did a few stunts when towed behind fast motor boats, received the applause of the crowd and departed. In the west surf riding is what those of the east term aquaplaning.

As we were saying—they had planned for everything with the exception of a motor boat race of the kind to which the Gold Cup is entitled. The American Power-Boat Association officials had been informed several weeks before the date scheduled for the first race that everything was in readiness, and so when the president of the association, who incidentally was the owner of two of the four boats which were to race, arrived on the scene Saturday before the races and found what had been done and what undone he dispatched the following telegram to the writer, which sums up the situation in a few words very much to the point:

we arrived.

The course was picturesque and beautiful enough—for a holiday outing but for a motor boat race it was next to impossible. It was on a body of water at the head of navigation on the Mississippi River, formed by a new dam above the City of St. Paul. It was



Miss Detroit II, the fastest boat in the world going at a 60-mile clip



George (Teddy) Reiss, driver of Hawk Eye II, sitting on one of the logs which were pulled out of the Mississippi. The bright spot at the end of the log is where Hawk Eye's propeller struck. One can imagine the results

It was on a body of water at the head of navigation on the Mississippi River, formed by a new dam above the City of St. Paul. It was

surrounded by high bluffs on both sides which made interference from wind or storm out of the question. Yet hardly more than a month previous where this body of water now is was just a river bed, underwater in the rainy season and dry as a bone in the summertime. The bed was strewn with such things as generally cover a river bed of this kind—mostly refuse, brush, dead trees, logs which had been started down stream in the olden days when logging was a profitable vocation but had run aground before they had reached their destination at the mill. Pieces of baby forests were growing here and there also, which when the gates at the dam were closed and the



Whip-po'Will, Jr., the ill-fated craft of which great things were expected. She is owned by Commodore A. L. Judson and powered with a twelve-cylinder Van Blerck motor

around, accurately surveyed with an easy turn at the lower end but a hairpin at the other or grand stand end. Fortunately the competing boats were so few and far between that there never was more than one boat making a turn at one time or serious results might have followed, in which case the crowd would have got its thrills which it came expecting and hoping to see. As it was Whip-po'Will, Jr., upset and went to the bottom when making her first turn on a trial run before the first race. This

(Continued
on page
50)

A minute after the start of the third race with Miss Detroit II in the lead and Miss Minneapolis second

water rose, formed little islands to the right, left and in the center of the Gold Cup course, to be. And as the water rose the material which had been peacefully sleeping on the river bed for a century, more or less, suddenly came to life and floated to the surface. The larger logs only half returned to the land of the living. Instead of floating on the surface, they stood end up, only a few inches above the water, and ready to deal a death blow to any frail craft which happened to make too intimate an acquaintance with them. Such was the course chosen for the Gold Cup races of 1917.

In length the course was thirty nautical miles, six miles once



The motor of Whip-po'Will, Jr., and Commodore Judson talking with Jack Beebe, the designer of the boat

Attacking the U-Boat From On-High

A Plan for a Fleet of Warplanes of Many Thousand Horsepower Each—Machines That Will Be Delivered by Flying Them Across the Atlantic

By Major R. Perfetti

THREE thousand miles of ocean have stood in the way of solving the problem of striking Germany through the air.

As Rear Admiral Bradley A. Fiske and Messrs. Alan R. Hawley and Henry Woodhouse have pointed out in *MoToR Boating*, to win the war, the Allies must conduct major aerial operations against the U-boat bases and the German fleet at Kiel, as well as against Essen, Berlin, and other German military centers. To do that will take tens of thousands of aeroplanes, many of them the largest warplanes available, each of which will be able to carry one or two tons of explosives or torpedoes.

To transport from America to Europe the number of aeroplanes and aeronautic equipment needed to conduct major operations on a scale sufficiently extensive to destroy Germany's power would tax the entire tonnage at the disposal of the United States Government.

Therefore, the solution to this problem rests on flying the aeroplanes across the ocean.

This is entirely feasible, and we have machines in Italy that can do it. The main problem is really one of human power, but that is a solved problem, since our aviators have practically accomplished the equivalent of flying from New York to the Azores or from the Azores to Bermuda, which are the longest distances in trans-Atlantic flight.

The idea of solving the problem of delivering the machines to Europe by flying them across the Atlantic is brand new, and that is the only reason why the flight has not yet taken place. But now that the officials of the Aero Club of America, the Aircraft Production

Board, and some of the officials of the War and Navy Departments are interested in solving this problem, it may not be long before the first air cruiser bridges the two continents by flight.

People have been calling me up to express their wonderment at the fact that the huge Italian Caproni triplanes have been conducting continuous operations against the Austrian bases, enabling the Italians to win victories which could not have otherwise been won. It is true that we have developed in Italy some extraordinary aeroplanes and motors, and that the only thing that prevents our developing huge air fleets with which to strike at our common enemy is the lack of raw materials—materials with which the United States and Great Britain may now, we hope, supply us.

The distinction of conducting the largest air raid ever conducted so far went to Italy a few days ago when 232 aeroplanes, most of which were, unfortunately, of the smaller type, stormed an Austrian base. The raid was successful and only one aeroplane failed to return.

This raid showed more than ever the revolutionary value of aircraft and why the world's authorities now believe that the war is to be decided in the air.

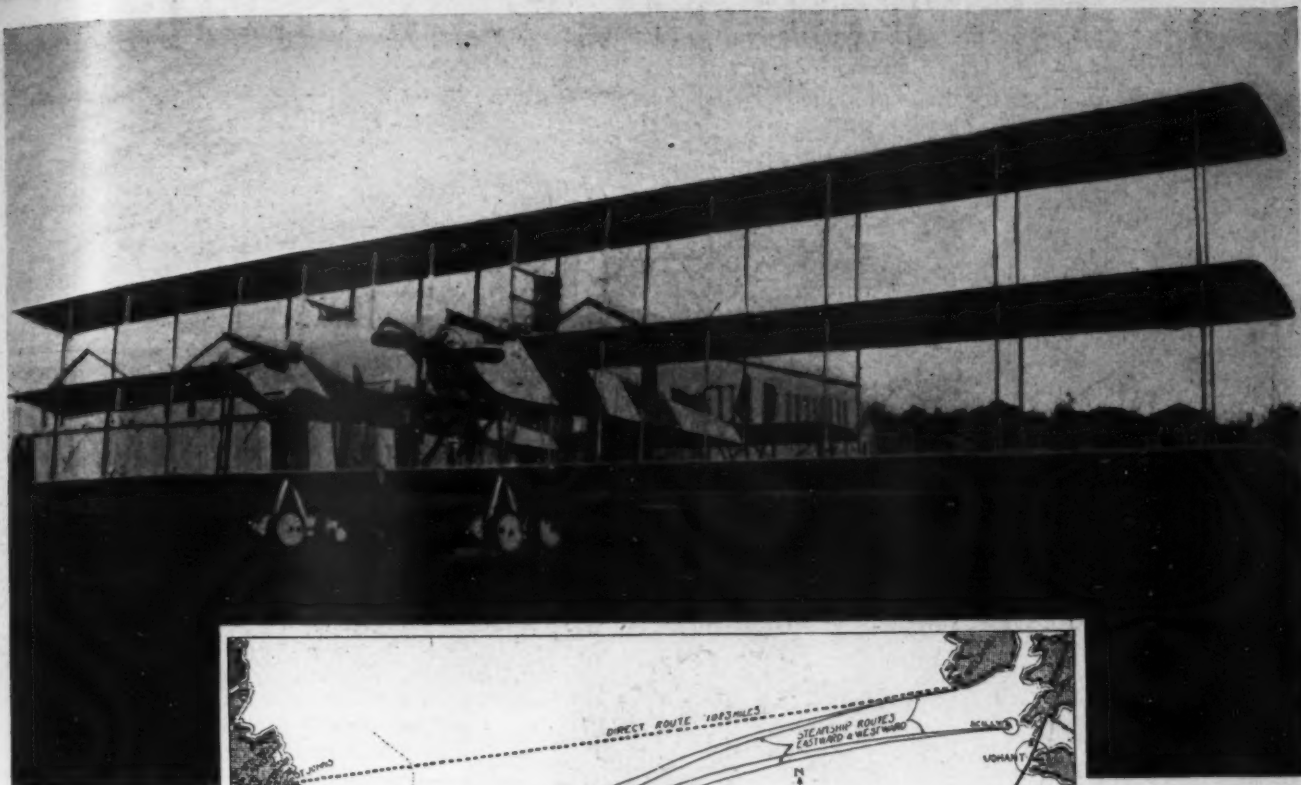
Up to recently the one difficult problem of the Allies was to find a means of eliminating the U-boat menace. The U-boat has been destroying ships faster than the Allies have been able to build them and whenever there have been considered plans for building the tens of thousands of aeroplanes needed with which to strike Germany through the air, this constructive aerial program has always been limited by that one difficult problem of shipping the aeroplanes to Europe after building them here in America. It would take practically all of the tonnage available to carry the tens of thousands of aeroplanes needed and which the United States can build but cannot deliver.

I am glad to be able to say now that there is a solution of this problem at hand and that the United States Government or any group of patriotic Americans can test the plan which I propose for a few hundred thousand dollars—although I

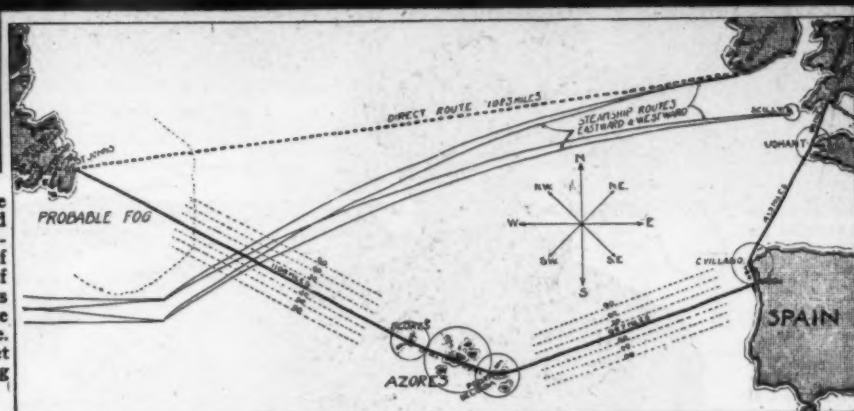


A group of Italian aviators brought over to the United States for the purpose of instructing American flyers

Major Perfetti, head of the special Italian Commission in the U. S.



A new Caproni triplane said to be equipped with three 700 h.p. motors and capable of carrying five tons of fuel. A flight across the Atlantic should be easy for this machine. The plane is 160 feet wide and 90 feet long



Two routes which might be used for a flight from America to Europe. The direct route is about 2,000 miles in length while the one via the Azores consists of two legs of 1,200 and 927 miles respectively

personally hope that not less than five million dollars will be set aside to undertake to carry out this plan, which consists of taking the latest Italian air cruisers which can carry twenty-five passengers and building another even larger air cruiser, the designs of which have just been completed by the same Italian engineers who designed and built the twenty-five-passenger machine and flying these machines across the Atlantic.

This would solve for good the problem of sending aeroplanes from the United States to the Allies—and whereas it is less than 500 miles from Great Britain to Kiel, Wilhelmshaven, Heligoland, Essen and other German U-boat and military bases, these air cruisers delivered from the United States to the Allies by airline can then be sent to destroy the German bases.

These two giant air cruisers are the latest Italian developments in aeronautics. Having to fight a powerful enemy over the Gorizia mountains and across the Adriatic Sea, the Italians have had to evolve dreadnaughts of the air, which can fly over mountains and across seas. The result was that Italian genius developed the large Caproni triplanes, the fast Pomilio, Macchi, S. I. A., Savoys, Verduzio, and other most efficient aeroplanes, which now hold all the world records, including the record for useful weight carried, which is close to five tons; the greatest speed, our latest Pomilio making 157 miles per hour; the largest distance covered in a single flight, which happened several

days ago, when an Italian officer flew 920 miles from Turin to Naples, without a stop, which took only about ten hours. Our flying boats, like our land machines, hold records; and our Isotta Fraschini, S. P. A., and other motors, which range up to 600 h. p. per motor, and will soon be 1,000 h. p., are acknowledged to be the best in the world.

Two months ago I announced at a meeting held at the Automobile Club of America, under the auspices of the Aero Club of America, that I expected soon to be able to announce as a fact that we would have aeroplanes capable of carrying from twenty-five to fifty passengers each. I am now glad to state it as a fact that these machines can be built, and that Italy will be glad to supply a number of these air cruisers to the United States Government or to any group of patriotic Americans who may wish to demonstrate the possibility of delivering aeroplanes to the Allies by flying them there.

We will be glad to undertake not only to supply the machines,

but to fly them across the Atlantic for the United States Government or patriotic people who may undertake to do this. Within the last few weeks a Caproni plane has been undergoing a very severe test in the United States. In every particular it has fulfilled the greatest expectations. A large number of passengers have been carried at one time at an almost unheard of speed. At the time of this writing a trip is planned to be made in a few days from Norfolk to New York.



The only German aeroplane in East Africa now captured by the British. The black soldiers standing in front were trained by the Germans

Who's Who To-day in the World



The timers at the lower end of the mile course on which Miss Detroit II made her world's record of 61.724 miles an hour



The Committee of Judges and Timers. From the left, A. C. G. W. Young

Gar. Wood, of Detroit, Mich., the owner of the fastest boat in the world, and a man with a heart big enough to own a boat twice as fast as his Miss Detroit II



Dr. Schefcik in ordinary life, but nicknamed the "Torpedo in Action" by the Gold Cup followers. The Regatta was advertised throughout the West by inviting the people to attend in order to witness a Torpedo in Action. About the only live thing with any action to it which we could see was the doctor



One of many similar signs advertising the festivities



Teddy Reiss and Jim Kneshaw, driver and mechanic on Hawk Eye II. Two faithful enthusiasts who worked day and night to keep their craft in the race

of Motor Boat Racing Celebrities



Templeton, Dr. J. F. Schefcik, Al Pray, Henry Sampson, Jr., C. F. Chapman



Timing the mile dashes. The men with the telephone receivers are "Bill" Nutting (seated), "Bob" Power and Henry Sampson



Commodore Albert L. Judson, principal owner of Hawk Eye II and Whip-po'-Will, Jr., president of the American Power Boat Association, Commodore of the Lake George Regatta Association, and a high official in a dozen other yachting organizations. Although followed by a jinx which made his year's efforts to produce a successful racing craft count for naught, yet the Commodore was not discouraged, and promised to make another try next year

Jay Smith, without doubt the best racing driver and mechanic in America. Also noted for his willingness to give his competitors "a hand" whenever they are in trouble

Harry Groat, who coaxed the 250 h.p. Sterling motor in Miss Minneapolis II

Winn Wood, helmsman on Miss Minneapolis



Corinthian Yacht Club Goes

The clubhouse and basin of the Corinthian Yacht Club of Philadelphia as it looks in peace times

By C. S. Street

Photographs by Pearce

THE Corinthian Yacht Club, of Essington, Pa., once the yacht club of the millionaire and the ideal home of the sailor, has changed from pleasure to business. Her fine fleet of schooners, yawls, raceabouts and motor craft, have stopped the fun of yachting and taken on the grim duty of lending a helping hand to our Government, in its hour of need.

The handsome and commodious quarters, built for the comfort and pleasure of the members, has been turned over to the government as a base for the Delaware River and Bay, and the Fourth Naval District, so that the fleet of the club, and those who have signed up with Uncle Sam, may have a starting point which is complete in every detail pertaining to preparedness and equipment.

The Corinthian Yacht Club is located on the back channel at the turning point of the ship's channel right at the lower end of Tinicum Island, Delaware River. This gives the club quiet waters in the large basin and at the moorings directly in front of the club property.

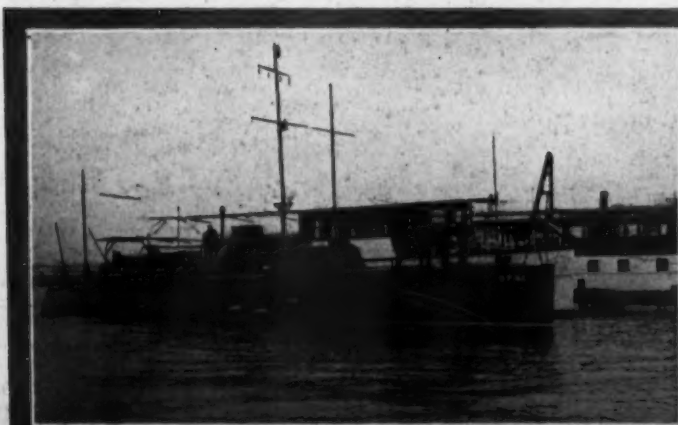
Probably there is no other club so located with every convenience right at its doors. The Essington Ship Building Co. is but a stone's throw to the north of the club, where rail-

ways, as well as hundreds of workmen are on the job, day and night, together with the fleet of this section which is now on active duty. A large aviation school where many aeroplanes are installed for the purpose of instructing the students in flying is situated just below the ship building company. The great war supply center of Chester, Pa., is stationed 3 miles below the club, and up channel about 12 miles is the City of Philadelphia. Next door to the Corinthian are located the Philadelphia and Riverside Yacht Clubs, so that there is something doing at all times in this vicinity.

Where once we saw the white flannels and yachting togs of the club members, while they were hustling to and fro from their floating homes at anchor, we now see their craft with the mahogany painted gray, deck houses ripped off to make room for guns, awnings of gray and twenty or more men taking the place of the regular crew. The owners of the Corinthian Club fleet, we see in the regulation uniforms, some as commissioned officers and others taking part as crew, all doing their best to help Uncle Sam do business.

Commodore Charles Longstreth, with his two fighting ships, the Arawan II and Zenith, has been the keynote to the Naval Coast De-

fense and his everlasting hustle has brought forth thirty or more of his club fleet to this work. All the boats that could be used by the government were put into commission by their owners to be used for patrol duty in the Fourth Naval District. They comprise a fleet of the pleasure craft known throughout the world, and are as follows: Arawan II, a 71-footer, commanded by its owner, Com. Chas. Longstreth, in charge of the Delaware River and Bay section; Zenith, a 73-footer, commanded by Lieutenant Maurice Belknap, in charge of the Cape May section; Alcedo, 275 feet long, owned by Com. Geo. W. Childs Drexel, as well as his new express cruiser Akbar. Clipper, a 65-footer, owned and commanded by Lieutenant I. C. Wetherill, also on duty at Cape May, having Walter A. Bell, another yachtsman of Philadelphia, as Ensign. This cruiser is well fitted for patrol work at sea and has just been made winter-ready by the installation of hot water heat throughout. Diantheus, 65 feet long, built by Herreshoff, and owned by the famous Bermuda racer, John P. Crozer, of Beach Haven. Dixie, a 62-footer, owned by S. F. Houston; Juniata, a 138-footer, owned by Geo. W. Elkins; Howarda, a 73-footer, owned by H. S. Kerner;



Sectional Patrol No. 61, formerly Zenith, owned and commanded by Lieut. Charles Longstreth, U. S. N. R. F.

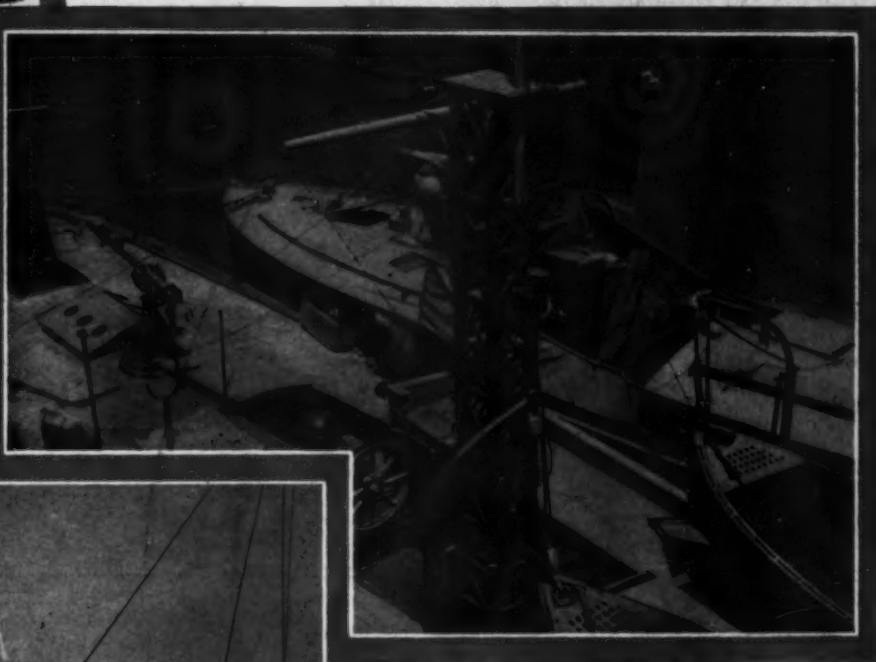


Two motor cruisers which have been taken over by the Navy Department for patrol service

each boat having a gasoline motor. Although this is a small number of enrolled vessels of the Corinthian Yacht Club that are actually taking part in the service of the government, the others, some sixty large pleasure craft, stand ready for the call, and their owners have pledged themselves to use these vessels for service only and have withdrawn from all yachting sport for the period of the war. With an active membership of over

two hundred, thirty per cent. are now on active duty. Some of the members are located on the Maine coast, others abroad and at Annapolis attending instruction classes, and the balance are working under the supervision of Commander Charles Longstreth, who is in charge of the Fourth Naval District.

Secretary Addison F. Bancroft has had the management of the club's welfare for many years and can tell you of the days when the yachtsmen withdrew from the Keystone Yacht Club, and the Philadelphia and Corinthian



Looking down on the business-like deck of two of the patrol boats

clubs were born; of the vessels that have sailed from this club across the salt pond and around the world; of the several commodores who have stood fast to make the club a sailing club until three years ago, when the members took up the popular sport of motor boating; of the famous schooners and sloops that sail from this club and of the one-design racing knockabouts that have taken part in contests each summer since the organization of the club.

Should you be privileged to visit the club, you would see a magnificent building surrounded by large

(Continued on page 49)



Every reservist must learn to signal by means of the semaphore

Georgiana III, a 95-footer, owned by Lieutenant J. H. R. Cromwell, who is at Annapolis. The boat is commanded by Lieutenant R. L. Young, the well-known Bermuda navigator. Drusilla, a 75-footer, owned by A. Drexel; Little Aie, a 55-footer, owned by John Price Wetherill, with Lieutenant Henry Bowes in charge; Nedeva, a 64-footer, built especially for patrol work and owned by Lieutenant Cromwell, commanded by Ensign Geo. Mesmick; Margo, a 64-footer, owned by Geo. H. McNeely; Ponce, a 59-footer, owned by Philip du Pont, one of the Delaware River cruiser prize winners; Nirvana II, a 65-footer, owned by J. H. Merrick; Suzanne, a 110-footer, owned by E. G. Buckner; Zipalong, a 79-footer, owned by E. W. Clark; Marguerite, an 80-footer, owned by Edward B. Clark; and Trinitaria, a 40-footer, owned by L. S. Clarke. H. W. Warren and A. C. Woodman have their sloops Valiant, a 60-footer, and Idelia, a 65-footer, entered for service,



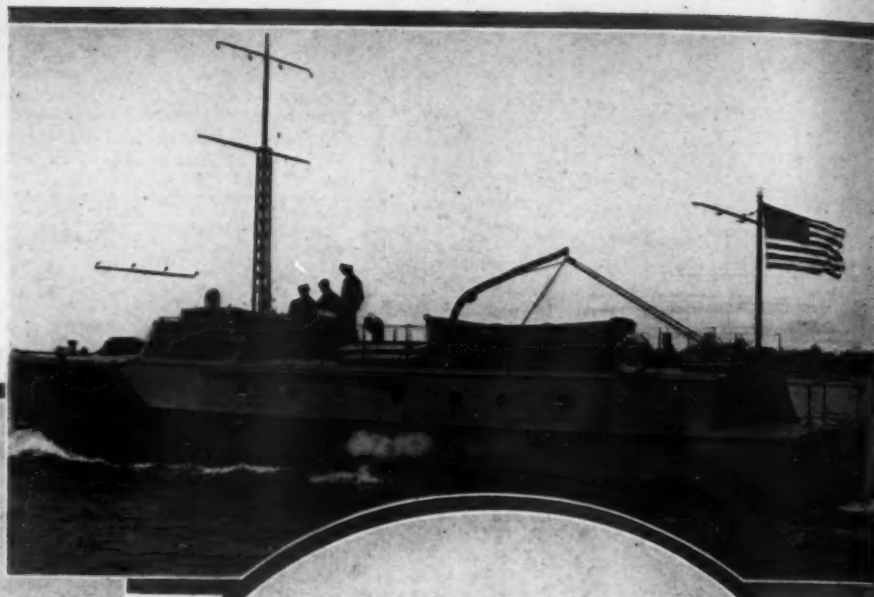
Many of the yards which formerly were engaged in building motor craft have been taken over by the Navy Department

The 1917 Express Cruiser a Real Success

GREAT strides forward have been made in express cruiser design within a year. The season of 1916 was in many respects the beginning of the express cruiser era. While the results and experiences of the owners of these craft of a year ago could hardly be called gratifying, yet the faults have been carefully analyzed by the motor manufacturers, so that now it can be truthfully said that the express cruiser motor of 1917 is a perfected piece of mechanism.

A number of marine engine manufacturers have directed their special attention toward the production of models suited for express cruiser

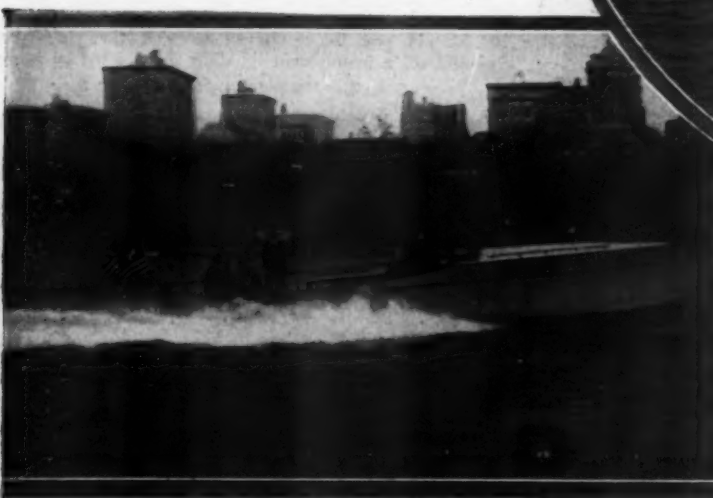
At the right: S. P. 34, owned by Herman Oelrichs, U. S. N. R. F. She is now powered with a Duesenberg motor



Louise, built by Lawley and powered with a 280-360 h.p. Duesenberg. She is owned by J. Sullivan of Chicago, Ill. Her length is 50 feet



A head-on view of Marjo



Below: A 50-footer built by the Greenport Basin and Construction Co. for the Navy Department. She is powered with a 275-400 h.p. Duesenberg motor and is planned to be used as a motor torpedo boat in connection with the battleship fleet. She had a speed of better than 40 miles per hour on her official trials

One of the most successful V-bottom express cruisers of the year is Marjo, built by the Albany Boat Corp. With a 275-400 h.p. Duesenberg a speed of 30 miles an hour is claimed

work. Those who have been directing their efforts along this line include the Driggs Ordnance Corp., Duesenberg Motor Corp., Gas Engine & Power Co., Sterling Engine Co. and the Van Blerck Motor Co.

While it would be impossible to illustrate and describe in one issue of MoToR BoATinG all of the successful express cruisers of 1917, yet those shown on the following few pages may be taken as fairly representative.





A Seventy-One-Foot 25-Miler

MYSTERY II, a larger and faster edition of the 1916 Mystery, has recently been delivered to her owner, Ralph Pulitzer, of the Manhasset Bay Yacht Club. The new express cruiser was designed by A. E. Luders and built by the Luders Marine Construction Co., of Stamford, Conn. Early in July this boat was put through her trials and averaged 25 miles an hour for four and one-half hours.

Mystery II is 71 feet long by 13 feet beam and has a draft of 3 feet 9 inches. She is one of the biggest of the season's crop of fast express cruisers or patrol boats. Her power installation consists of a pair of eight-cylinder 280-350 h.p. Patrol Model Duesenberg motors, developing the maximum rated power at 1,350 r.p.m. and turning a $23\frac{1}{2}$ x 28-inch three-bladed Columbian propeller.

Her accommodations are unusually complete and comprise comfortable sleeping arrangements for six persons with additional facilities

The owner's quarters



ties for the crew in the forecabin. Aft of the forecabin is the owner's stateroom with private toilet and sleeping accommodations for four people and next aft is a vestibule leading up to the deck and followed by two single staterooms.

The designer of this very attractive craft is to be congratulated on the efficient layout of the engine-room and its ventilation, which is so important in a boat of this type where big power is generated at high speeds. A wireless room furnished with a long distance Cutting & Washington wireless set is located aft of the engine-room. Across from this room is the galley with a compact but quite commodious ice-box.

The main dining saloon, a beautiful room splendidly decorated and furnished, is located aft of the galley and is provided with two berths to be used in case of emergency.

The boat is entirely controlled from the bridge deck. All controls, etc., are brought up to the steering column, although the boat is equipped with ship's telegraphs.

Photographs Copyrighted by Brown and Dawson.



The bridge is entirely closed in to protect the helmsman from the elements



One corner of the accommodations below decks—the saloon, galley and toilet



Kumagin at full speed makes very little fuss even though her speed is 23 miles per hour

Kumagin of Chicago

A New Seventy-Six-Foot Twin-Screw Express Cruiser Which is a Notable Addition to the Great Lakes Fleet—Speed: Twenty-Three Miles per Hour

A NOTABLE addition to the fleet of yachts on the Great Lakes has been made in the 76-foot express cruiser Kumagin, which has just been launched by the Great Lakes Boat Building Corp., of Milwaukee, Wis., for Albert Pack, of Chicago. One of the most striking features of interest is that Kumagin is the largest V-bottom express cruiser afloat. The result of her maiden cruise fully demonstrates that the performance of the cruiser is all that could be desired.

The arrangement plan contemplates crew's quarters forward followed by the galley, main salon, bridge deck, engine compartment, owner's stateroom and bath, guest stateroom, and large cockpit. Accommodations are provided for a party of nine and a crew of four.

The cruiser throughout reflects

luxury and elegance. The upholstery is of imported French broadcloth, the color of which harmonizes with the silk hangings and velvet

carpets. The interiors are all done in mahogany.

The whole structure is of unusual interest on account of the standards of construction, which involve the use of sawn frames, steam bent ribs, and battens running from stem to transom, all spaced on short centers and forming a laminated framework which is practically indestructible. The planking is made up of two courses, the inner skin of which is cedar laid longitudinally, with the plank seams centered on the battens.

The power plant consists of two eight-cylinder Van Blerck motors which give the cruiser a turn of speed of 23 miles per hour. All controls are carried to the bridge deck for one-man operation.

The bridge which can be almost entirely closed in



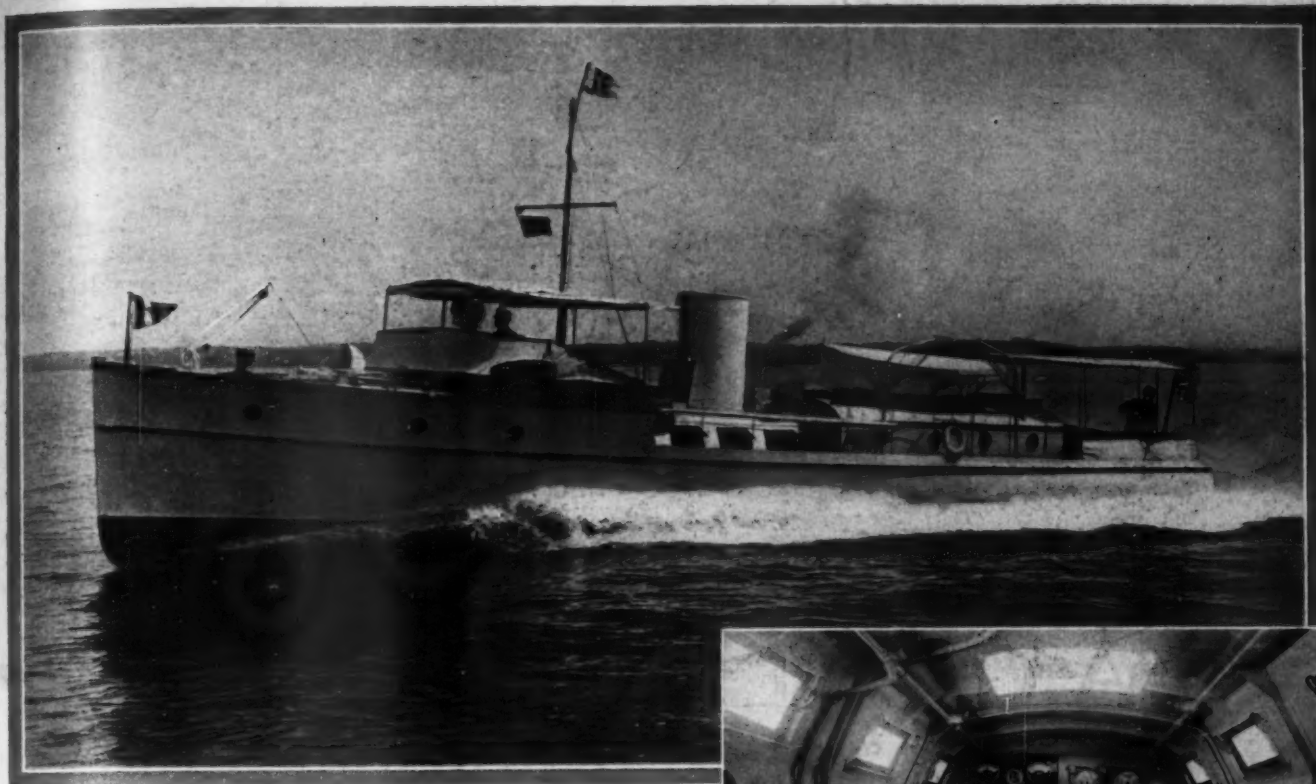
Photographs by Brown & Rehbaum



The spacious after deck of Kumagin



A view of one of the staterooms below deck



Inquirer at 25 knots

Cruising at 25 Knots

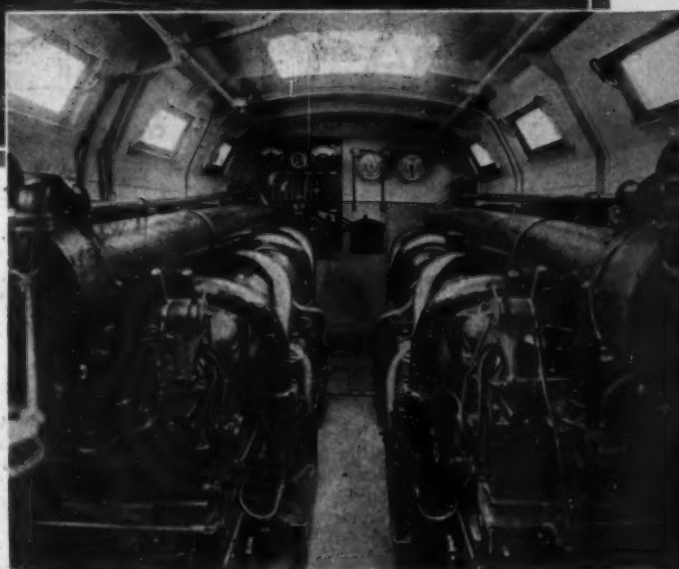
Inquirer, Powered With a 600 H.P. Engine, Has the Accommodations of a Modern Hotel and an Average Speed Greater Than a Motor Car

THE express cruiser of to-day has all the conveniences and points of advantage of the high-powered motor car, and many more in addition. Touring on land in the latter is not to be compared with the luxurious comfort which awaits the owner of a small size motor yacht. His guests, as numerous and fastidious as he cares to select them, are included in the same class. When cruising on any of the numerous waterways of this country, whether it be on inland waters, along the coasts or at sea, out of sight of land, it makes little difference in the performance or running of the 1917 express cruiser.

No hotels to consider, with the attendant reservations made weeks in advance, no bad roads or schedule to live up to, no baggage to

be loaded every morning, and no policemen always on the alert to detect some breach of the traffic laws—just go where you please, when you please, and as far as you like. Your hotel is always with you, so is your own chef—eat what you like, dress as you see fit, and enjoy life. Such is the purpose of the express cruiser.

Inquirer, owned by Col. James Elverson, of Philadelphia, Pa., is an example of the possibilities within an overall length of 62 feet. In outward appearance she resembles nothing



The two 260-360 h.p. Duesenbergs, while mammoth in size, yet do not crowd the motor room uncomfortably

which has gone before her. A strikingly original personality has been given to her by the designer, A. Loring Swasey, of Boston, Mass.

Two eight-cylinder 260-360 h.p. Duesenberg motors control the speed of the boat.

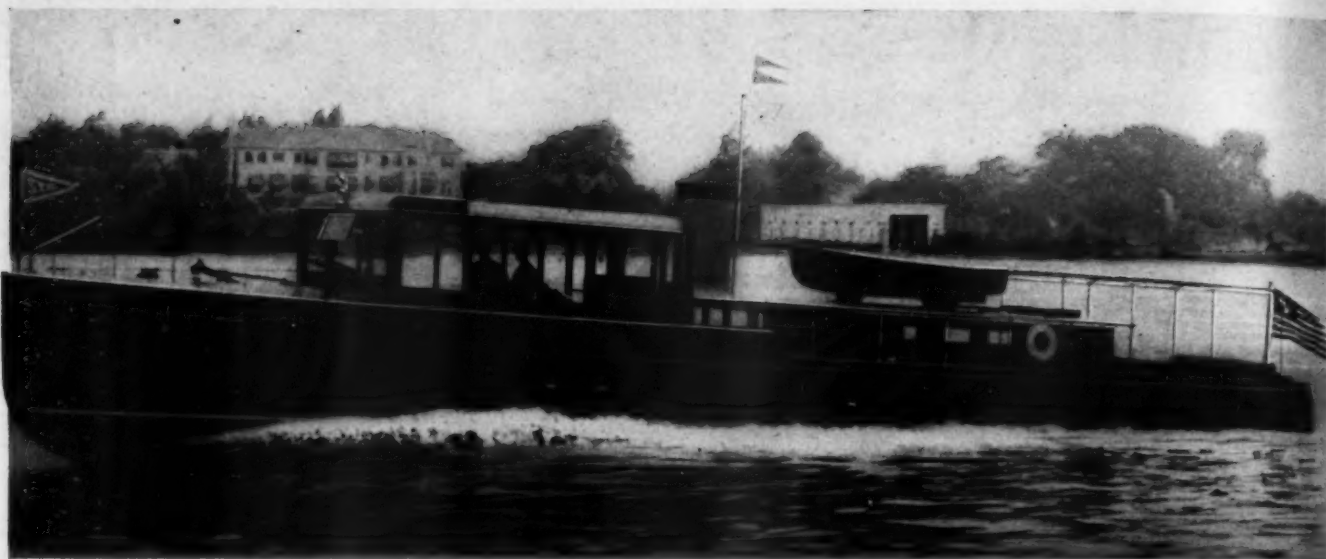
Photographs by Edwin Levick.



The aft deck, together with the bridge deck forward, give ample room for those who prefer to sail on deck



One corner of the main cabin, looking forward. On the starboard side is the entrance to the completely equipped galley



Vivo, owned by C. B. Lockwood, of Sandusky, Ohio, one of the oldest yachtsmen on the Great Lakes

A Great Lakes 60-Footer

Vivo, the Latest Addition to the Rapidly Increasing Fleet of Express Cruisers on Lake Erie—A Boat Capable of a Maintained Speed of 24 Miles Per Hour

SANDUSKY, Ohio, cherishes a new 24-mile day cruiser, the property of C. B. Lockwood, a trim craft with the dash and vivacity immediately suggested by the name—Vivo.

This luxurious cruiser is of the round-bilge type, 60 x 10-foot, from designs by Carlton Wilby, of Detroit. The Church Boat Co., of Sibley, Mich., built her.

The frames are of clear white oak, the planking of Virginia white cedar, the decks of teak, the deck-house and interior finish entirely of mahogany, and the fastenings of copper and bronze. No expense has been spared to make Vivo a superb express cruiser.

Vivo trims beautifully at high speed, the lines being so perfect that she runs with very little disturbance and leaves a remarkably clean wake. The motors, placed amidships, are of the

Vivo	
Length, over all.....	60 Feet
Length, waterline.....	59 Feet
Beam, extreme.....	10 Feet
Draft.....	3 3/4 Feet
Power.....	Two six-cylinder Sterlings
Speed.....	24 M.P.H.

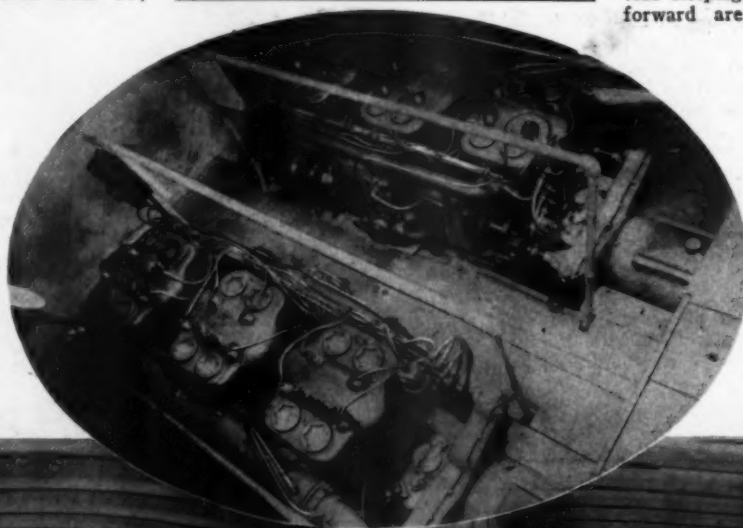
counterbalanced crankshaft type, six-cylinder, Model F Sterlings, and there is no vibration.

In the aft cabin, we can revel in the beauty of the surroundings. Rich mahogany with its complement of green, harmonized by the use of white in a proportion of refinement, leaves nothing to be desired. Extension berths provide sleeping accommodations for four. Up forward are two more berths, while the

pit could be adapted for three more sleepers if open air is preferred.

The aft cockpit is bounded on three sides by spring box cushions, is carpeted and has a folding mahogany table in the center. It is from this section that vistas of the lake and small rivers (which abound in northern Ohio, and make motor boating in that district a series of journeys through a veritable paradise) are enjoyed.

The two Model F, six-cylinder Sterling motors



One corner of the main cabin



The bridge or sunken pilot house

Zenith, Now S. P. 61, U. S. N. R. F.

New 73-Foot Express Cruiser Which Bears the Distinction of Being the First of Its Type to Meet With Official Approval—Cruising Comforts in Times of Peace Not Sacrificed

Photographs by Joseph N. Pearce

S. P. 61

Length.....	73 feet
Beam.....	11½ feet
Draft.....	4 feet
Motors.....	Duesenberg
Capacity.....	400 h.p. each
Builder.....	Mathis Yacht Bldg. Co
Designer.....	Bowes & Mower

THERE has recently been completed at the yards of the Mathis Yacht Building Co., of Camden, N. J., an interesting and attractive 73-foot express cruiser which was designed by Bowes & Mower, Philadelphia, Pa., specifically for naval service. In spite of the fact that the boat was intended for war-like service it was not found necessary altogether to neglect the comforts expected in a vessel of this class. Obviously, high speed is one of the requirements for a boat designed for naval service and for this reason large and powerful motors are obliged to be installed. A greater than ordinary cruising radius was also necessary and unusually large fuel tanks had to be provided for. To make room for this equipment it was necessary to reduce the accommodations ordinarily provided in an express cruiser for the owner and his guests.

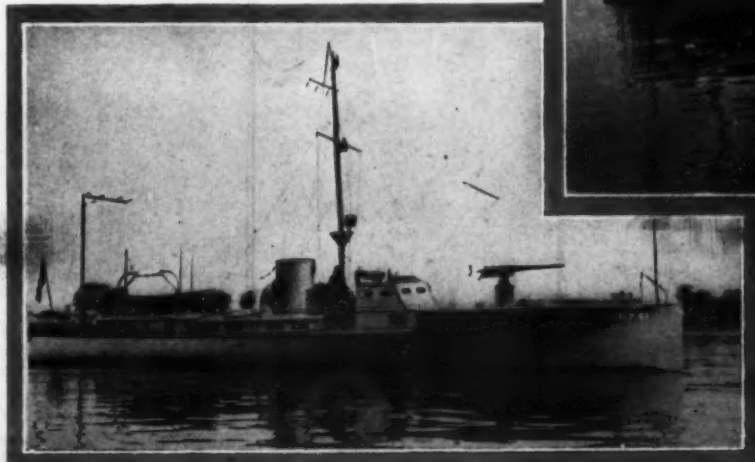
S. P. 61, which is the present designation of the cruiser in question, is driven by two Duesenberg 400 h.p. engines, manufactured by the Duesenberg Motors Corp., of Chicago, Ill. Fuel is carried in three tanks having a combined capacity of 464 gallons which are installed at the forward end of the engine, while two other tanks with a total capacity of 880 gallons are mounted directly astern of the engine-room which occupies the amidships position. Oil reservoirs flank the engines at the after end while auxiliary gasoline tanks of small capacity are placed at either beam forward.

Accommodations are provided for a crew of four men in the forecabin. Immediately aft of the forecabin and separated from it by a steel bulkhead is a double stateroom with a toilet adjoining. The galley is located aft of the engine-room which is well supplied



The two 400 h.p. Duesenberg motors are placed together with the shafts running at a diverging angle, permitting proper clearance of the two propellers

with bookcases and alcoves. A buffet is built in against the partition separating the saloon from the galley. The galley is unusually spacious and extends somewhat more than half the beam of the vessel. Sharing its section with a toilet at the starboard side, the equipment of the galley includes a large ice chest and four-burner range with oven, sink, dish racks, etc.



This 73-footer is of a general design which will prove exceptionally valuable in time of need, having been designed with belligerent purposes in view

A view of the 3-inch rapid-firing gun mounted on the forward deck

found necessary to give an ample margin of strength in the construction of the boat. By using special hogging stringers the snap which results from the firing of the gun is absorbed. It is also necessary to use special steel beams, girders and tie plates to take up the local strains, fastenings in wood not being strong enough.

In the matter of speed S. P. 61 surpassed the expectations of her designers and builders upon her trial trips. Carrying the regular navy load which is about twice what would be put on board for an ordinary cruising trip, the boat performed as follows: 24½ knots at 1,350 r.p.m., 22 knots at 1,100 r.p.m., 19¼ knots at 900 r.p.m. and 15¼ knots at 700 r.p.m.

The engineering feat involved in building a light high-speed motor boat of this type to withstand the racking engendered by the firing of a 3-pounder gun from her forward deck is a truly difficult one. When Zenith's 3-pounder was fired during her official trials it was noticed by those on board that the concussion would fairly lift the boat up. When the gun was depressed a vacuum caused by the shells going past the windows was enough to suck the glass out of ports and frames.



A complete wireless set, together with an arc searchlight which is placed high up on the signal mast, are included in the equipment

For service with the Naval Reserve, the cruiser mounts a 3-inch gun on the forward deck and to withstand the racking incident to firing a sizeable piece like this, it has been

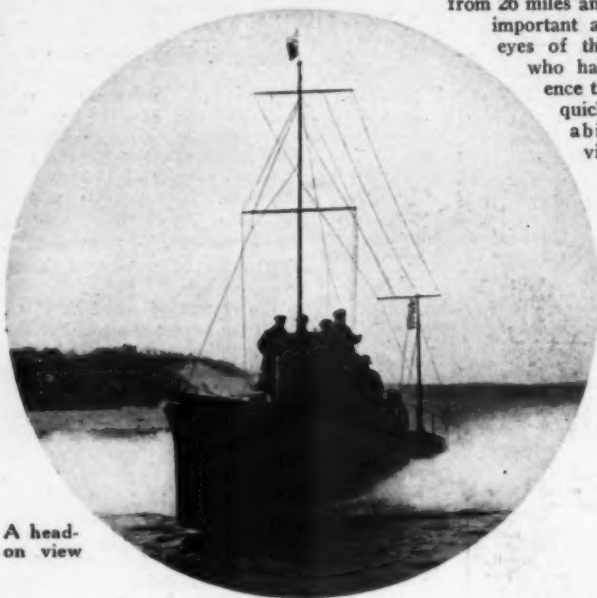
Patrol Boats for Over Seas Fighting

A Number of Craft Designed Especially to Combat the Submarine in Foreign Waters—Seaworthiness and Considerable Reserve Power Together With Speed are Featured

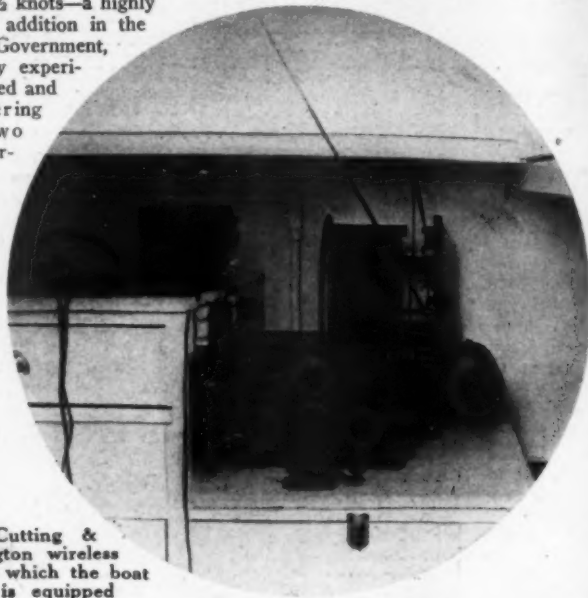
IN the accompanying illustrations is shown one of the latest type of boat ordered by the Russian Government for submarine service. This boat was put through her official trials at Greenport, L. I., under the supervision of government officials. She is one of an order for 60-foot motor patrol boats guar-

motors and a guaranteed speed of 26 m.p.h. was assured, and in each instance realized. But recently the power requirements have been changed and now a pair of eight-cylinder Duesenbergs having a bore and stroke of $6\frac{1}{4} \times 7\frac{1}{4}$ inches supply the persistent urge that gives these boats the increase in speed from 26 miles an hour to $29\frac{1}{2}$ knots—a highly important and valuable addition in the eyes of the Russian Government, who have found by experience that high speed and quick maneuvering ability are two vital character-

60 feet long by a beam of 10 feet and draw 3 feet of water. The two Duesenbergs are housed amidships in an engine-room that is well lighted, splendidly ventilated and with ample room for the mechanics to operate when necessary. The four 270-gallon fuel tanks are placed just abaft of the engine-room and have



A head-on view



The Cutting & Washington wireless set with which the boat is equipped

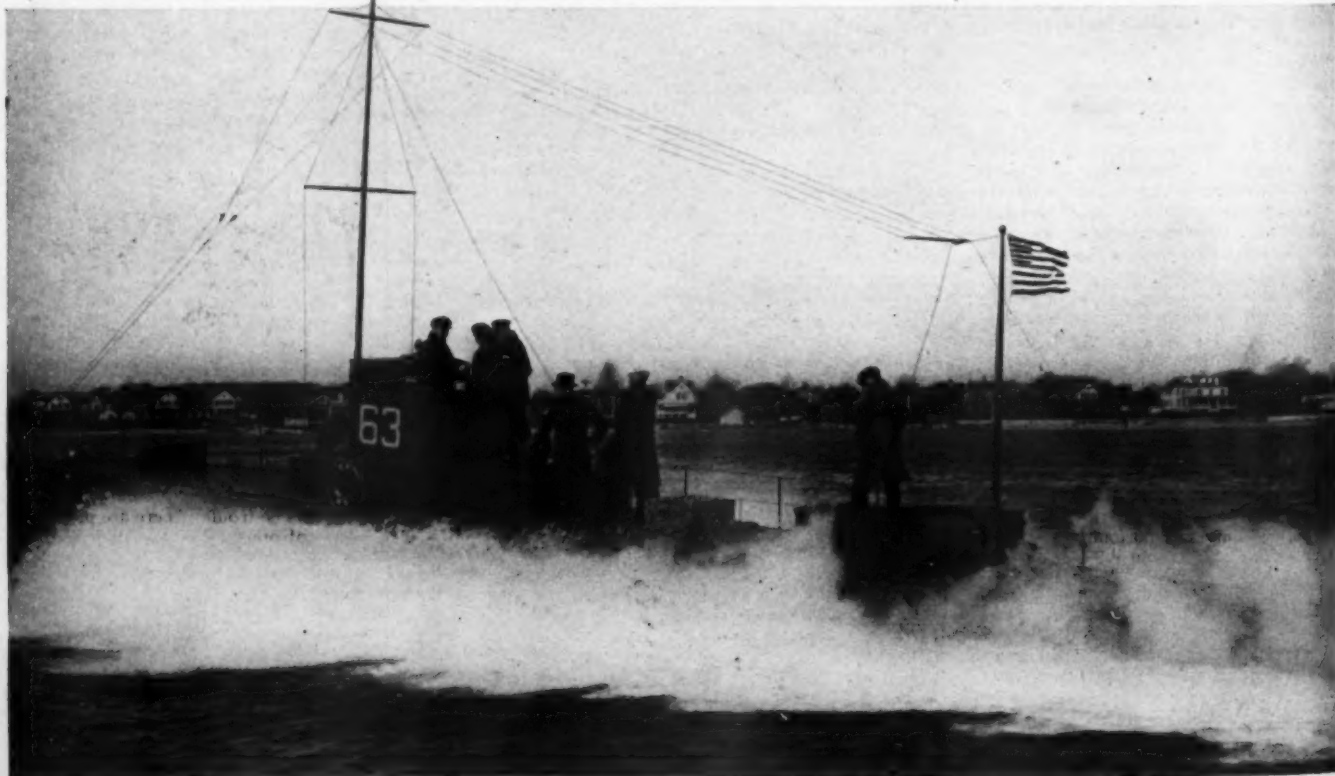
anteed to make a speed of $29\frac{1}{2}$ knots an hour. Forty-two boats of practically the same model and size designed and built by the Greenport Basin & Construction Co., of Greenport, L. I., were delivered to the Russian Government shortly before the completion of 63. A majority of the boats previously constructed were powered with three of the eight-cylinder Van Blerck

istics of the successful submarine chaser.

It has been found that speed is a vital necessity in a motor patrol boat, yet in addition such a boat has to be able to keep the sea in almost any weather and to have a wide radius of action. These boats, which are designed by J. W. Hussey, are of the V-bottom type with the floor flattening out aft so that they are in reality a huge monoplane. These boats are

a total capacity of 1,080 gallons, which at the guaranteed speed gives a cruising radius of approximately 500 miles, while at a lower speed 1,000 miles can be covered on one filling.

All of the boats are painted a battleship gray. Being low, rakish and fast as a streak, they handle with perfection. A flush deck with a small steering shelter just forward of amidships affords protection for the helmsman.



One of the boats built for a foreign power on her official trial trip

PRIZE CONTEST IN QUESTIONS AND ANSWERS

Caught in a Fog

Preliminary Preparations Should Be Made for Such an Emergency, Run at Moderate Speed, Listen for All Sounds, Use Your Lead and Trust Little to Luck

THE PRIZE CONTEST—Answers to the First Question in the August Issue.

Entering Harbor When Proper Landmarks are Obscured

The Prize-Winning Answer.

FOR the purpose of illustrating the above method we will assume that a vessel is at A¹ position, ascertained by D. R. by the lead, and is proceeding along the coast on a northerly course, and wishes to enter harbor and make the clubhouse landing.

The vessel is making, we will say, 10 miles per hour, or 1 mile every 6 minutes. Now the idea is to find the ship's approximate position, and this is done in the following manner:

D R and log gives position A¹. Now take a cast of the lead, and be sure the lead is armed so as it will bring up a specimen of the bottom, and note the time. Now as you are not sure of your position you decide to haul off a point or so in this case from N to N 17 degrees E. We also decide to run on this course for 18 minutes, or 3 miles. Now at the end of the first 6 minutes we take another cast, noting the time and kind of bottom which in this case is 9½ fathoms, sandy bottom. At the end of the second mile repeat the operation and so on. At A² we decide to haul up to N 73 degrees W, and run 3 miles. Repeat the operations, taking a cast at the end of every mile, and note time and bottom. After holding this course for 18 minutes we decide to change to S 72 degrees W, and we run on this course for 12 minutes, or 2 miles, repeating the operations the same as before. When the two miles are up we have decided it is not safe to proceed any further until the ship's approximate position is found, so we heave to and proceed as follows:

Take a piece of tracing cloth, and draw several straight lines to represent the meridians. Mark a point on the tracing cloth which will represent the ship's position in this case A¹, and lay off the several courses and distances, using the meridian line as a guide, which in this case is N 17 degrees East, 3 miles, N 73 degrees W, 3 miles, S 72 degrees W, 2 miles. We also mark off on the course line points where we took the soundings (see drawing in this case every mile) also mark the number of fathoms and the kind of bottom. Go to the chart and lay the tracing cloth over the chart's face, and slide it around until the marks on the tracing cloth coincide with the marks on the chart, that is, fathoms and bottom. After a few seconds you will find a position where the marks coincide. If they do not, take the nearest numbers, that is, keep sliding the tracing cloth around until you get the best results. Therefore, we find the vessel to be at B 5½ fathoms mud bottom, or the point where the last sounding was taken.

We can now make the landing from B by running on a time course, taking soundings, and keeping a good lookout.

To make use of the above method more certain and accurate, the problem of Reduction of soundings should be worked up before plotting the soundings on the tracing cloth.

A. E. R., Cape May Point, N. J.

Questions for the December Issue

1. With the appeal for the economical use of gasoline, what procedure, adjustments, or methods of operating would you suggest to decrease fuel consumption?

Suggested by G. A. L., Washington, D. C.
2. Illustrate and describe the construction of a refrigerator or ice-box for a small cruiser.
Suggested by E. J. S., Springfield, Mass.

Rules for the Contest

Answers to the questions, addressed to the Editor of MoToR Boating, 119 West 40th St., New York, must be (a) in our hands on or before October 20, (b) about 500 words long, (c) written on one side of the paper only, (d) accompanied by the sender's name and address. (The name will be withheld and initials or a pseudonym used if this is desired.) Questions for the next contest should reach us on or before the 20th of October. The Editor reserves the right to make such changes and corrections in the accepted answers as he may deem necessary.

The prizes are: For each of the best answers to the questions above, any article or articles sold by an advertiser advertising in the current issue of MoToR Boating of which the advertised price does not exceed \$25, or a credit of \$25 on an article which sells for more than that amount. (There are three prizes—one for each question—and a contestant need send in an answer to but one if he does not care to answer all three.)

For answers which we print that do not win a prize we pay space rates.

For each of the questions selected for use in the next contest, any article or articles sold by an advertiser advertising in this issue of MoToR Boating, of which the advertised price does not exceed \$5, or a credit of \$5 on an article which sells for more than that amount.

All details connected with the ordering of the prizes selected by the winners must be handled by us.

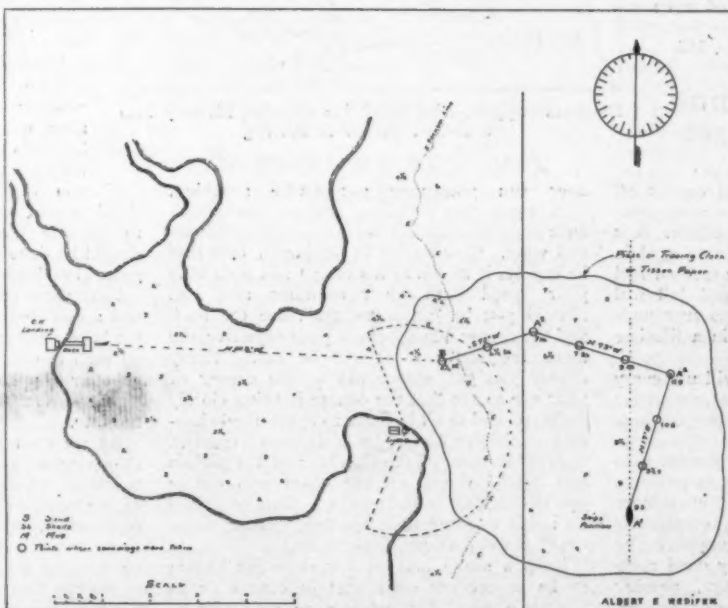
Preliminary Preparation

THE ease and security with which one can find his way to port when caught off shore in thick weather depends much more on the preliminary preparations that have been made for such an emergency, than upon what is done after the fog has descended and shut one in. Did you ever stop to think that merchant and naval vessels hardly ever lose track of their position in a fog? Of course the officers of all vessels dread fogs, as they vastly increase the danger and difficulty of navigation, but even in the thickest weather the careful navigator should have some idea of the position of his vessel, and by the use of this position by dead reckoning and the chart and lead line, harbor can usually be made unless the entrance is very narrow and hard to find.

It is in getting the position by dead reckoning that the matter of preliminary preparation counts so much. Dead reckoning is not a mere guess at the position of the vessel as some amateurs think. It is the position as obtained by a careful graphical or mathematical solution of the change brought about in the boat's position by sailing certain given courses and distances from the starting point of the trip, technically called the point of departure. Naturally one does not take departure from one's own dock, but from the last well-marked point at the harbor mouth, usually a lighthouse, light-vessel, or some other object whose position is accurately shown on the chart. To work out a position by dead reckoning it is absolutely necessary to have an accurate log of the trip that has just been made, and this in turn means that a good compass must be used in connection with a table of deviations. It is, of course, also necessary to know the speed of the boat and the time for which each course was held. The speed can best be obtained by a knowledge

of the speed your boat makes in miles or knots at the different engine speeds you are in the habit of using when off on a cruise. Because of the relation between the sea mile and the minute of latitude the speed in knots will be found the most convenient to use. The log should be carefully and faithfully kept in some systematic way in a log book. A good example of a well-kept log may be seen on page 14 of the August issue of MoToR Boating, and though to a certain type of motor boatman this keeping of a log will seem far too much trouble, there are plenty of others who are anxious to learn the proper way of doing things and who realize that the knowledge of practical coastwise navigation that they may pick up while off on their vacations may be of inestimable value to their country some day.

Having kept such a record of your trip in your log book and then having been caught



Mr. Redifer's diagram to illustrate his method of making a harbor in the fog

When you send in your answers you must state what you will take for a prize should you win one

PRIZE CONTEST

Setting the Valves

How to Do It on Four-Cycle Marine Engines—The Position of One Tooth on the Gears in Valve Setting Makes a Great Difference Between Good and Bad Results

THE PRIZE CONTEST—Answers to the Second Question in the August Issue.

Suggestions for Setting Valves

The Prize-Winning Answer

CAMSHAFTS are usually constructed from a solid metal forging, yet some designs have the cams rigidly keyed to the shaft, while with either type, unless the shaft in some manner becomes twisted, the possibility of the cams changing their prearranged positions is remote.

Where all the valves are actuated by these cam projections, arranged on one shaft, by determining the proper position of the cams to the valves of some one individual cylinder, the remaining cylinders will operate in correct sequence, unless as before mentioned the shaft is distorted or the driving gears are not rigidly fastened to the shafts.

On a motor provided with independent camshafts to the exhaust and inlet valves, the individual setting of each shaft is necessary, but the following description will apply to either type.

The covers to the engine base should be removed, in order that the cranks can be seen or a length of stiff wire inserted into the cylinder head to rest on the top of the piston.

Having selected some particular cylinder to work from, the crankshaft should be turned until the end of the connecting rod is within 40 degrees of bottom dead center or the wire inserted in the cylinder goes down eight-tenths of the motor stroke. The camshaft should be then turned, in the direction in which it runs when in operation, until the cam to the exhaust valve is against the push rod to the valve stem. The gears are then meshed and the crankshaft turned, noting carefully the movement of the exhaust valve. At about one-tenth of the piston travel on the up or exhaust stroke, or when the crankshaft has moved over 20 degrees to the opposite side of the lower dead center, the exhaust valve should be wide open and remain open until the piston is within one-tenth of its total travel from the upper dead center or the crankshaft about twenty degrees from its vertical position on the up stroke.

The valve then commences to close, and is entirely closed when the piston is 15 degrees past upper dead center.

The idea is to have the exhaust valve open early and avoid the piston rising against the expanding gas, tending to compress it.

The setting of the intake valve is a similar process, but it is usual to allow less lead than in the instance of the exhaust. The piston is brought 20 degrees past the top of the exhaust stroke, or one-tenth of total travel for rod measurement. This position is immediately after the exhaust valve closes. The inlet cam is rotated in the direction in which it revolves, until the cam sets up against the push rod to the inlet valve stem, and the gears are meshed.

The crankshaft is turned and the movement of the valve followed. It should begin to close at 15 degrees from the dead center of the down position of the piston, closing entirely when the crankshaft is 20 degrees past bottom dead center, or one-tenth total travel for rod measurement.

On some motors the inlet remains open after the end of the intake stroke, as this tends to fill the cylinder more completely with the charge, especially when the engine is running at high speeds.

The setting of valves on the different motors differs, and ordinarily the flywheel is marked

on the rim with such letters as, E. O., E. C., I. O., and I. C., meaning exhaust opens, exhaust closes, inlet opens, and inlet closes. Strict adherence to these markings will obtain the best results in the valve setting.

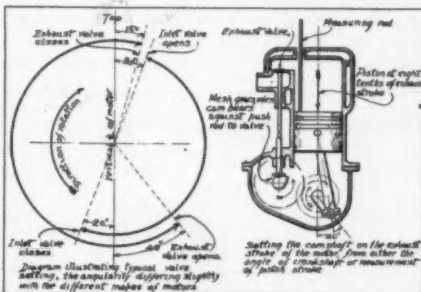
The primary idea in the setting of the valve, either inlet or exhaust, is to have the valve, during the corresponding piston stroke, remain open until the completion of the stroke, while the so-called lead or early opening compensates for the high speed at which the motor is run, by opening the valve slightly sooner, that the gas may escape before the piston begins to rise, and the inlet valve be open when the piston descends on the suction stroke.

The inlet valve is not so important in its opening, for on some motors the piston has descended one-third of its travel before the valve lifts. This may be ascribed to the theory, that the slight vacuum created draws a better mixture from the carburetor.

It is well to remember that the position of one tooth, on the gears, in valve setting may be the difference between poor and good results in the operation of the motor. Once the gears are properly meshed, mark them for future reference.

When the camshaft is removed, it is advisable to examine the cams and the camshaft bearings, for wear in these parts results with a reduced lift of the valve head, which reduces the effective opening or area for the entrance of the explosive vapors and passage for the exhaust gases, with the resultant decrease in the power output of the motor.

G. A. L., Washington, D. C.



Illustrating the various valve phases in a four-cycle motor by G. A. L.

Satisfactory and Easy Methods

SETTING the valves on a gasoline motor seems at first a difficult job but in reality it is very simple. On most motors to-day, the cams and camshafts are in one piece so that the relative position of all cams is fixed at the factory. If the valves of one cylinder are set correctly, those in the other cylinders must be correct also. Contrary to what one would imagine, the inlet valve opens after the piston has started its suction stroke and remains open until after it has started the compression stroke. Likewise, the exhaust valve opens before the piston reaches the end of its power stroke and closes after it has reached the end of its scavenging stroke.

In practice, the valves open and close a certain number of degrees, as indicated by crank travel, before or after the piston reaches one or the other ends of its stroke. It is usual for the inlet valve to open about 15 degrees after the piston has reached its innermost position in the cylinder and to close about 35 degrees after the piston starts up on its compression stroke. In the case of the ex-

haust valve, this usually opens about 45 degrees before the piston has reached the end of its power stroke and closes about 10 degrees after it reaches the end of the scavenging stroke, or just before the inlet valve begins to open.

In setting the valves, the first thing to do is to bring the piston, preferably that in number one cylinder, to its uppermost position on the compression stroke, which will be the point at which it fires. A mark is then made on the rim of the flywheel to register with the vertical center line of the motor, which center line should have some fixed mark, like a pointer, so that the other points as found will be located to correspond with the same mark. Next turn the flywheel a half revolution so that the piston in number two cylinder will be at its top position, and mark the flywheel as before, then turn the flywheel to firing point on number one cylinder again.

In order to determine when the crankshaft has moved the correct number of degrees, the simplest method is to measure off on the rim of the flywheel a distance in inches which will equal the number of degrees desired. The number of degrees in a circle, 360, does not vary, but the length of one degree is determined by the size of the circle in question. Suppose the diameter of the flywheel is 20 inches, by multiplying this by the constant 3.1416, the circumference in inches may be found, and by dividing this by 360, the length of one degree in inches on that size flywheel will be found, which in the 20 inch wheel is .175 inch. Therefore, 15 degrees would be 2 3/4 inches; 35 degrees, 6 1/4 inches; 45 degrees, 7 3/4 inches; 10 degrees, 1 3/4 inches.

After firing, the piston of course travels down on its power stroke and as the exhaust valve opens 45 degrees before the end of this stroke, it should begin to open when a point on the flywheel 7 3/4 inches ahead of the lower dead center comes opposite the vertical center line of the motor. Then continuing to turn the flywheel, the exhaust valve remains open to a point 10 degrees or 1 3/4 inches after top dead center. The inlet valve now begins to open at 15 degrees or 2 3/4 inches after top dead center, just 5 degrees after the exhaust valve closes. The inlet valve remains open during 200 degrees of crank travel, closing 35 degrees or 6 1/4 inches, measured on the rim of the flywheel, after piston has passed its lower dead center and is traveling upward on the compression stroke. This completes the four strokes and the cycle is repeated.

In this way, the points at which the valves open and close are ascertained in one cylinder, and, as the cams are set at the factory, the timing of the valves in all the other cylinders of the motor is accomplished at the same time. Of course, to make sure, it would be well to go through the process for each cylinder separately marking the points on the flywheel rim for future checking up. Manufacturers may vary the timing of their valves somewhat from that given, but these are average settings and will be found satisfactory.

A. L. M., New York City.

Over-Look Nothing

WHEN setting the intake and exhaust valves of a four-cycle engine, if the following rule is applied the operator will not experience any trouble caused by the timing of the valves. Working with the valves on No. 1 cylinder, first place crank of No. 1

(Continued on page 49)

PRIZE CONTEST

Hauling Out for the Winter

Make a Suitable Cradle, Select a Time When the Tide Is at the Proper Height, Have a Strong Tackle and Then Pull

THE PRIZE CONTEST—Answers to the Third Question in the August Issue.

Depends Upon Conditions

(The Prize-Winning Answer)

LIGHT boats can be hauled out in seemingly impossible places with the aid of improvised cranes and makeshift runways, but with a heavy cruiser the case is different.

To start with a suitable cradle must be built. Next, a shelving beach presents a good substitute for a runway. The place selected should be visited at low tide and two heavy planks fixed on the bottom similarly to the manner shown in detail at A, Fig. 1.

If the ground is rocky, cross planks nailed to the under part of the planks and weighted down will keep the affair from floating. Six planks that when laid double will be half as long again as the boat will be sufficient to move the boat to any distance, care being taken to fill in with suitable material any spaces under the planks to prevent careening of the boat when over such places.

While shelving beaches are easy to haul out on, they often times have low banks that are inundated by the spring tides. To prevent premature launching at that time, the boat must be blocked up. This necessitates some labor and material and can be obviated by selecting as the place to haul out one that has an abrupt edge at high water.

In this case a portion of the bank, wide enough to allow the passage of the boat and cradle, is shoveled away (Fig. 1).

The lower edge of the cut should be far enough below high water mark to allow the nose of the cradle to be easily pulled onto a roller at the ends of the planks. The cradle is, of course, first floated under the boat and lashed to it.

In both the above cases a "dead man," pre-

three in number—six by sixes that can be hired from the house movers—with three cross pieces, the outboard two acting as bilge supports. Two sets of tackles are used, the lower blocks being secured to the wharf by passing wire rope through the crevices and around a timber B.

Two ropes running from the outboard to the inboard ends of the levers will lash the boat to them while she is being lifted. When the levers are pulled down as far as they will go, the boat can be hauled on to the wharf or the whole affair can be pulled forward, the lifting falls being eased off as necessary.

Fig. 3 shows the simplest way of all. Three planks that total one and a half times the length of the boat are fitted with two $\frac{3}{4}$ -inch by $\frac{3}{4}$ -inch strips far enough apart to allow the keel of the boat to slide along without friction. The space between the strips is well greased and with enough hands to steady the boat she can be hauled out easily without injury to keel or underbody.

Where there is a hard bottom a lumber wagon can be run down at low water and if there is a tendency to float, two planks passed through the wheels and weighted will remedy the matter.

JAMES E. MURPHY,
New London, Conn.

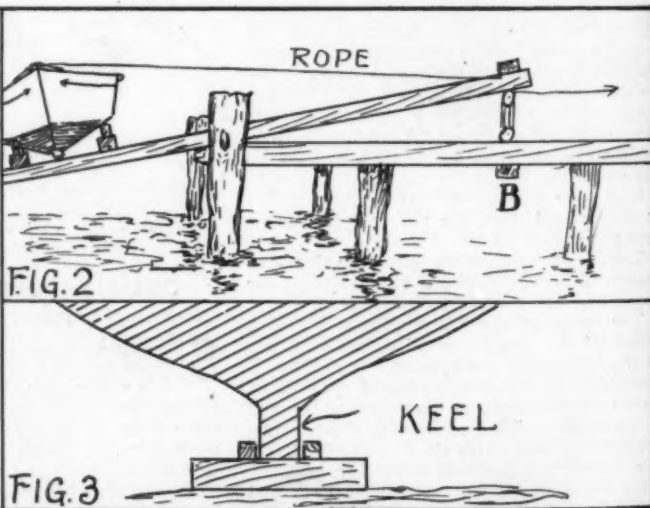
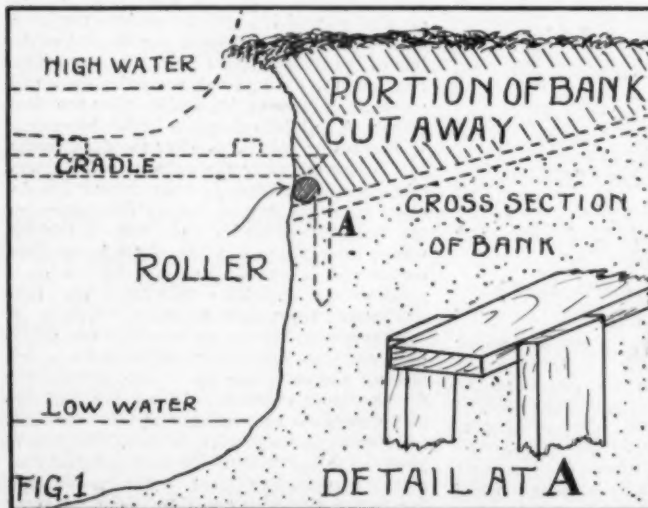
A Marine Railway

THE first thing to do after a boat has been beached on the high water is to sling a rope clear around her. Run the rope under the stuffing box when bringing it around the stern, for if it is placed over the stuffing box when the strain comes it is liable to work down and loosen from the deadwood. When you have a rope around the boat with both

ends at the bow, make the ends fast and sling a short rope over the bow deck, and fasten the other rope up about a foot above the keel on each side. This keeps the rope from dragging on the ground, and gives a direct pull along the keel. If the line is made fast to the bow post it has a tendency to pull down and bind the rollers, especially on raised-deck boats.

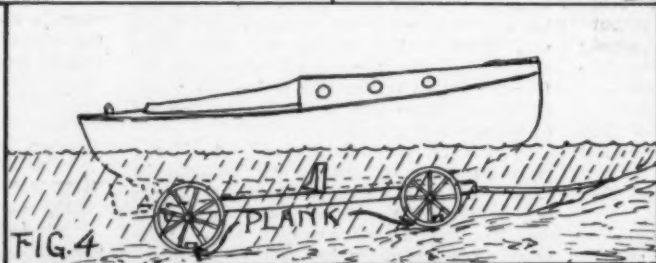
Next take a six-inch plank and place one on each side of the boat about 18 inches out from the keel, and with the after end about a foot past the middle of the boat. Then take the pry bar and dig a small hole under the keel near the bow, and with a few blocks under the pry you can raise the boat high enough to place a few blocks under the keel. Take a new hold with the pry, and raise the boat until high enough to allow a roller to be placed under the boat and rolled back until almost back to the middle of the boat, then place a roller under the bow, and let the boat come down on the rollers. Place two more planks farther up, and a roller about one-third the length of the boat on these planks, and you are ready to haul up.

As the back roller comes out it can be moved up to the bow position, the same to be done with the planks. Boats over 30 feet require two extra planks, and an extra roller. After the boat has been started a foot or two place it on an even keel and lay a 12-inch plank along the top of the rollers under the bilge, with a few small blocks, and a short board put in at an angle to conform with the bilge angle, and let the boat come back on this. This serves to keep the boat from binding at the bilge, and keeps it nearly in an upright position. This plank will not have to be moved after it has once been placed, as it moves along



ferably a railroad tie sunk to the depth of three feet will take care of the shore end of the tackle provided no tree is handy. A kedge anchor 70 pounds or over will serve the purpose as well. Six-inch wooden rollers are desirable for many reasons and man power has certain advantages over horse power, unless the horses are very steady pullers.

Figs. 2 and 3 represent two methods adaptable to light boats. In the former case the levers are



The proper method to use when hauling a boat out without a marine railway depends upon several conditions. Read Mr. Murphy's instructions

with the boat on top of the rollers.

After the boat has been hauled up a little, and you wish to lead it off in any other direction, simply wait until a roller comes under the middle of the boat, then take the bow roller out and it will be balanced on the middle roller, and can be swung in the desired direction, care being taken not to turn it too far or it will slide off the roller. As it is being turned take a sledge or any other roller that can be used as a ram, and bump the outer edge

PRIZE CONTEST

of the roller to turn it around with the boat, and keep it at right angles to the keel, or it will not roll. Then place other planks and roller headed in the new direction and haul away to any part of the shore you wish to place your boat.

In hauling out boats we use a block and tackle made fast to a tree or other anchorage on small boats, and a windlass with snatch blocks to lead rope to any part of shore for larger boats, or, if the boat has a windlass on its bow this can be used to displace an elaborate marine railway, as it is much more mobile, and does not require the extra depth of water that a railway does. A railway will only handle one boat on a tide, but with this method you can beach from ten to twenty, and haul them out after tide falls. We haul out about sixty boats each fall by this method, and in placing them overboard the reverse method is used.

First place a roller under the center, then one under the stern, not forgetting to take a turn around the tree with your tackle, or the boat will run away from you.

LUMBER REQUIRED

- 4 yellow pine planks, 1 1/2 ins. x 6 ins. x 16 ft. for roller to run on.
- 1 yellow pine plank, 1 1/2 ins. x 12 ins. x 16 ft. for bilge plank.
- 3 maple rollers (or other hard wood), 5 ins. x 5 ft.
- 1 oak piece tapered, 4 ins. x 5 ins. x 8 ft. for pry, should be iron bound on end.
- 10 small blocks, 2 ins. x 6 ins. x 1 ft. to use to block boat and under pry.
- 1 small block, 2 ins. x 4 ins. x 1 ft. for under bilge.
- 1 small block, 2 ins. x 8 ins. x 1 ft. for under bilge.
- 1 board, 1 1/2 ins. x 12 ins. x 3 ft. for under bilge.

K. N. B., Philadelphia, Pa.

Not Difficult If Properly Handled

THE following account gives an accurate description of a method I have used for hauling out a 22-foot cabin boat for the past six years, and usually accomplished the work single-handed. While this method is simple and has worked well, I would not advise its use in boats over 22 feet in length, as I believe a lever should never be applied to a boat over this length, for it would be liable to strain the boat.

The first step in the hauling out process was to select a time when the tide had reached its maximum height and then run the boat up on the beach as far as possible. This I figured would give me less distance to pull the boat and also save a lot of work bridging a sharp incline on the beach, i. e., by floating the boat over this incline which I could not do with a cradle under the boat.

While waiting for the tide to recede I got all my tackle together, consisting of a few planks, blocking, rollers, and a 6 x 6 x 20-foot joist for use as a lever. The second step was to raise the boat up high enough so as to be level and make rolling her forward to a winter berth an easy matter. To accomplish this the lever was brought into play by getting a purchase on the keel at the stern. It required very little weight to hold this lever down so a notched-shaped stick drove into the beach held the lever down while the blocking was put under the boat, the forward end being raised up to the desired height in a similar manner.

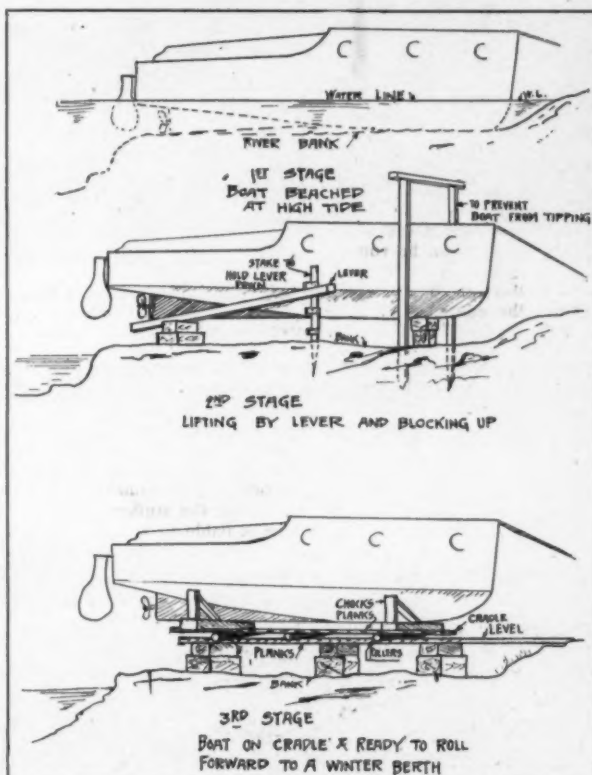
This accomplished, two planks were laid in the fore and aft direction of the boat and on top of the transverse blocks which were then supporting the boat, one plank on each side of the keel. The cradle was next slipped under the boat, which consisted of two planks laid fore and aft and three short pieces laid in the transverse direction of the boat. These were nailed to the fore and aft planks and two chocks fitted to prevent the boat from rolling over, which completed the cradle.

The weight of the boat was then transferred

from the lever to the rollers and the boat now in a level position it was an easy matter to roll the boat forward to her winter berth by means of a rope and a purchase on a lever.

The advantage of this method of hauling out a boat is that the method of straining with block and tackle is eliminated, and it will be found very easy with a proper lever to accomplish the described method with little trouble.

Another method I have seen used, but which requires more ground ways, is by a sliding way similar to that used to launch a boat, the ways being well greased. The boat is then pulled up by means of block and tackle. This method has the double advantage in that when the boat is hauled to the top of the inclined ways by having another set of ways leading at right angles to these mentioned the boat can be pulled over side ways without turning. This gives room on the inclined ways for any



W. R.'s method of hauling out a small craft

number of boats to be pulled up on one set of ways.

W. R., Quincy, Mass.

Grease or Roller Ways

THE season for hauling out is again close at hand. Practically all the larger boats will be hauled at the boat yards, and the majority of the smaller craft will lay up with them.

Every town cannot boast of a boat yard, and owners are forced to travel several miles to get their boats when there is available shore space close to home, but no facilities for hauling out. This fall, if you can find the space, and induce your friends to help, haul out your own boat. It is not as big a job as it seems.

The necessary equipment includes four or six long timbers, not smaller than 4 x 6 inches, except for light boats, several cross ties, 2 x 4 inches, material from which to construct the cradle for the boat, miscellaneous blocks and wedges, and two sets of tackle blocks and lines, and some grease or rollers.

With the above equipment any boat weighing up to three or four tons may be hauled out by four or five men.

The cradle upon which the boat sets should be made before the last day. This is made from two heavy timbers at least half the length of the boat, with three or four cross ties bolted across the top, and well braced to prevent racking. The width of the skids should be nearly as wide as the boat, and the end ties longer to take the braces which hold the boat from falling. The bolt heads on the under side should be countersunk, and the ends of the skids rounded up to override the joints in the ways.

The ways are made 1 inch wider than the skids, and kept parallel by nailing across ties on the under side. Cleats or battens are nailed to the outside edges to prevent the cradle from running off the ways, or the ways may be made narrower and the cleats fastened to the skids.

It is advisable to arrange the work so that the ways and skids may be placed and weighted down at low tide, and the hauling done at high tide. Before sinking the ways nail a batten at each outer corner to mark it, allowing the end to project below far enough to hold in the bottom.

Don't forget the grease or rollers: Cover the bottom of the skids, and the top of the ways, with a grease having a good body, but not too hard. If these greased surfaces are first planed smooth, there will be less friction.

While waiting for the tide lay the tackle and get everything ready. Let one man engineer the job, and let him do it without arguments or discussions at every point. Generally a tree, or something solid, can be found to hook the tackle to. If not, set three good stakes in line, fastening to the last one, and taking a couple of turns around each of the others. At this point make fast the stationary block of a four-fold tackle. Fasten the movable block directly to a rope on the cradle, or use a larger line between.

Now with a good tide in get the boat on the cradle, set up the braces or chocks and haul away. The start will be easy, but as the boat leaves the water, the load increases, and it will be necessary to put on a luff. This is done by fastening the stationary blocks alongside the stationary block of the main tackle and the movable block to the fall line, so that it pulls the other block. This gives a great increase in power, as explained later.

It is good practice when using the luff to hold all that is made on the main tackle. Make a short piece of line fast to the stationary block, and with the end take two half hitches around the two lines running from the block, and let one man hold it until the luff is run out.

There is a patent pulling device advertised in MoToR BoatinG which increases the power 73 times.

The breaking strain or strength of new manila rope 1-inch in diameter is 9000 pounds; of 3/4-inch diameter, 5000 pounds. The strength of old rope is an unknown quantity, but an idea of its condition may be had by untwining the strands and noting the wear and color of the center.

Allowing a factor of safety of five, half a ton may be lifted on a single 3/4-inch diameter rope, and nearly a ton on 1-inch diameter. Using a four fold tackle increases the strength and lifting power in direct proportion to the number of strands passing through the movable blocks. For example, 100 pounds pull on the fall line of a fourfold tackle will lift 400 pounds on the hooks and a fourfold luff will increase the original 100 pounds to 400, and the original 400 pounds to 1,600, or as the product of the strands of the two tackle.

W. B. M., Newburg, N. Y.

Four More Fast Steppers

Two Florida Craft Adapted for Shoal Draft Work as Well as Navigation on the High Seas—
A Great Lakes Sedan and a Long Island Sound Cruiser

JOANNA, a production of the Albany Boat Corp., of Watervliet, N. Y. made her first appearance at the 1917 Motor Boat Show. Shortly after the show she was shipped to Florida, where she was tried out at Miami, but arrived just too late to take part in the big event of the winter season—the Miami Regatta.

Joanna is 40 feet long and has a beam of 8 feet. She is powered with a six-cylinder Duesenberg Patrol Model motor having a bore and stroke of $6\frac{3}{4} \times 7\frac{1}{2}$ inches. Designed and built by the Albany Boat Corp., of Watervliet, N. Y., her sturdy construction throughout comprises

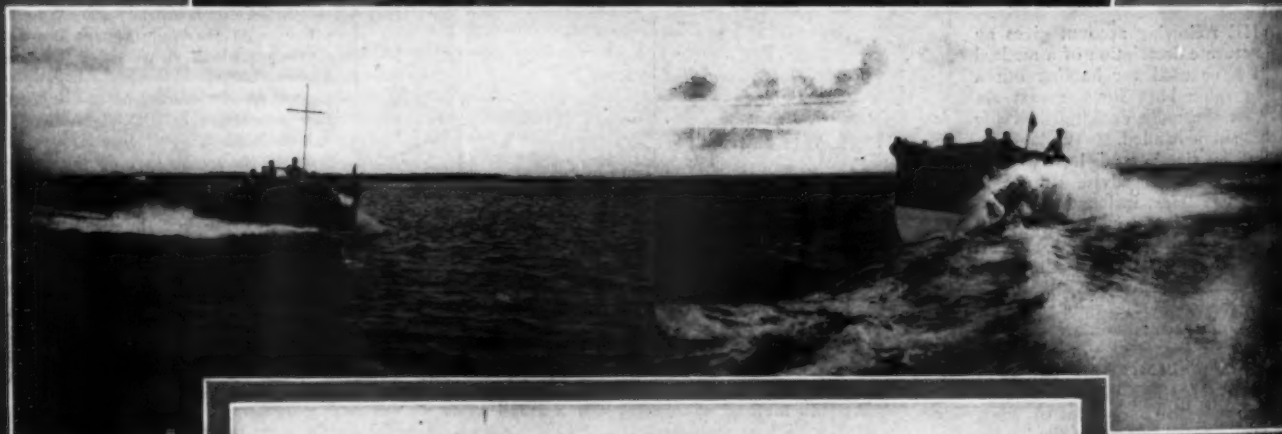
THE general dimensions of Sylvia, a Sedan runabout owned by Logan Thomson, of the Champion Coated Paper Co., of Hamilton, O., and used by him at Charlevoix, Mich., are

feet, 7 feet 6 inches beam and a draft of 3 feet. With her engine installation, which consists of an eight-cylinder Duesenberg motor having a bore and stroke of $6\frac{3}{4} \times 7\frac{1}{2}$ inches, and operating a Columbian wheel having a diameter of 26 inches and a pitch of 34 inches; at 1,300 r.p.m. is capable of a speed of from 36 to 38 m.p.h.

Sylvia was designed and built by the Great Lakes Boat Bldg. Corp., of Milwaukee, Wis., which can be easily detected in the sturdy construction of the boat. Her hull is seam battened throughout, double planked and is of the finest mahogany finished natural. The interior trim is in white cedar



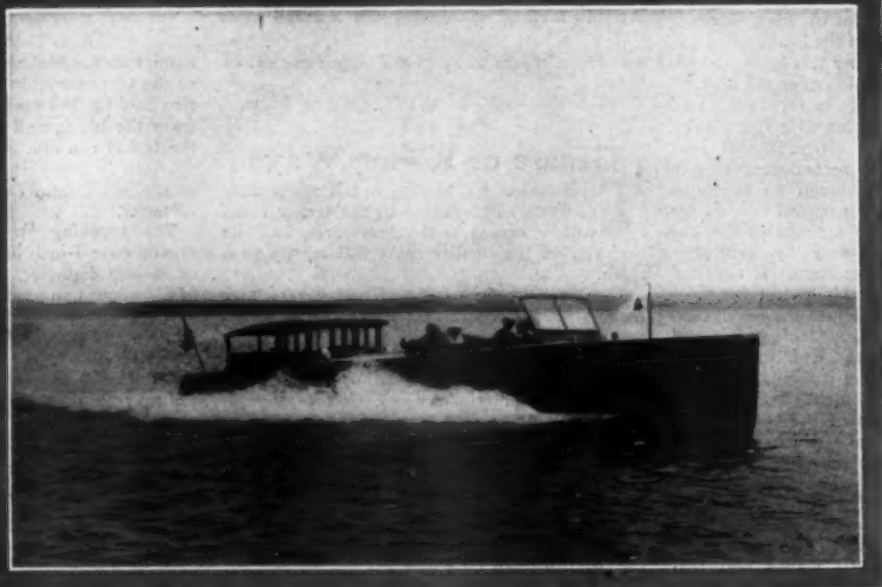
Helen, a 60-foot express cruiser, built by the Luder's Marine Construction Co., of Stamford, Conn., for A. J. Moxham, of Bridgeport, Conn. She is powered with an eight-cylinder Van Blerck motor



Joanna, a Florida express cruiser built by the Albany Boat Corp., Watervliet, N. Y.

everything in the way of comfort and speed. Her original owner, Nick Metzner, of New York and Rockledge, Fla., was killed in an automobile accident recently.

The trial trip of Joanna consisted of a 400-mile run in the open sea from Jacksonville to Miami, Fla. The trip was covered in a little less than twenty hours actual running time.



Sylvia, a 48-foot sedan runabout used on the Great Lakes

Raven III, a 50-foot Florida express cruiser, powered with two eight-cylinder Speedway motors

and the sedan cabin aft affords comfort to those not desiring to sit in the forward cockpit, which provides exceptional seating accommodations, having an auto top and seats upholstered in the finest of leather.

The general finish is in white and mahogany and the boat presents a most pleasing appearance. This type of boat is bound to prove popular even on open water.

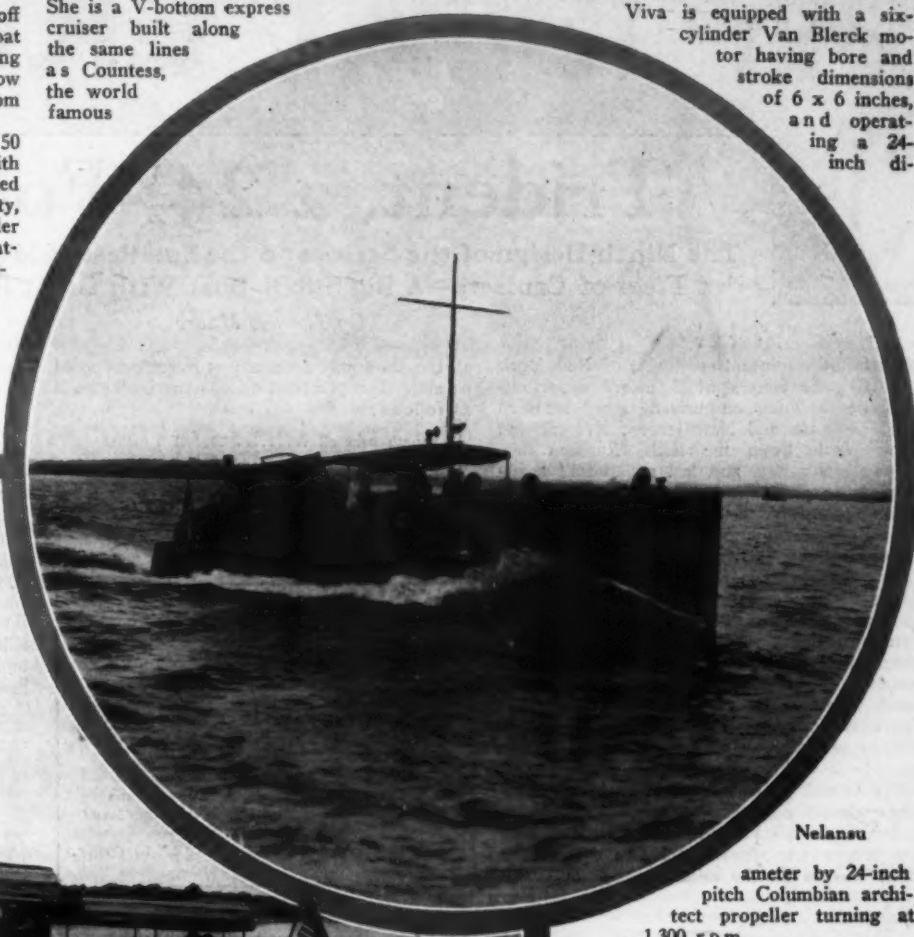
Nelansu, Viva, Imova and Sarah Jane

JOHNS KENT'S new 50-footer, just off the ways of Reuben Bigelow, master boat builder of Monument Beach, stepping along at 20 odd m.p.h., curls as pretty a bow wave as any craft that ever hailed from Brockton.

Nelansu, as the boat has been named, is 50 feet long by a beam of 9 feet 9 inches with a draft of 2 feet 11 inches. She was designed by Tams, Lemoine & Crane, of New York City, and is powered with a Model F eight-cylinder 200 h.p. Sterling engine, with which she attains an excellent cruising speed. Comfortable accommodations for four persons has been provided for in the construction of this craft, and every essential for the pleasure and enjoyment of a party on a cruise. A large roomy cockpit affords a delightful lounging place for the owner and his guests.

She is a V-bottom express cruiser built along the same lines as Countess, the world famous

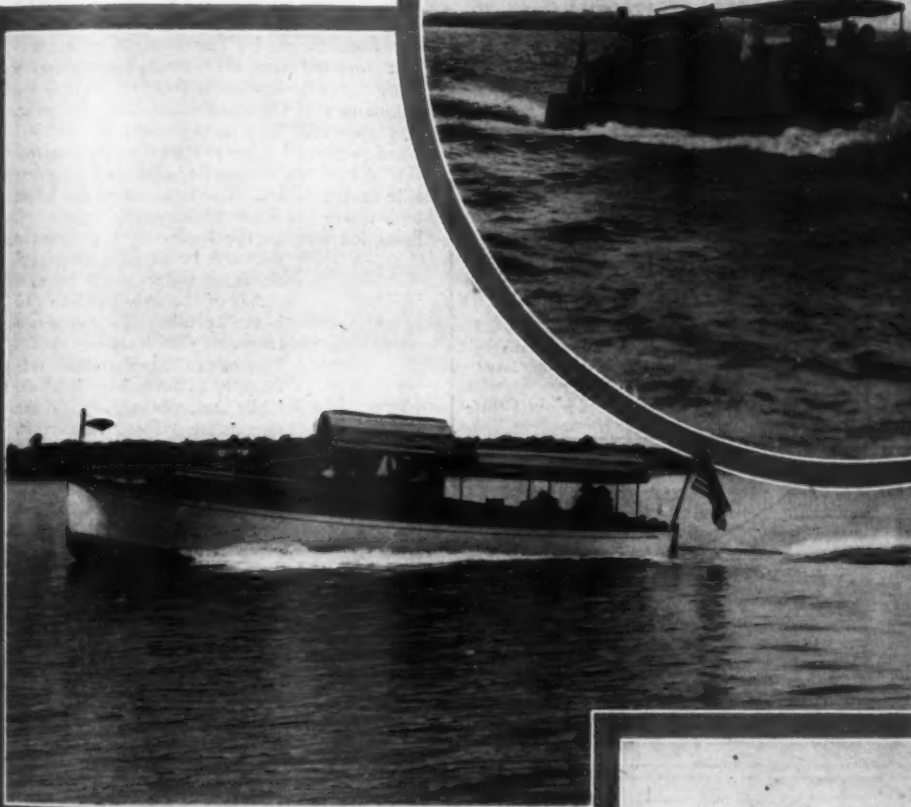
Viva is equipped with a six-cylinder Van Blerck motor having bore and stroke dimensions of 6 x 6 inches, and operating a 24-inch di-



Nelansu

ameter by 24-inch pitch Columbian architect propeller turning at 1,300 r.p.m.

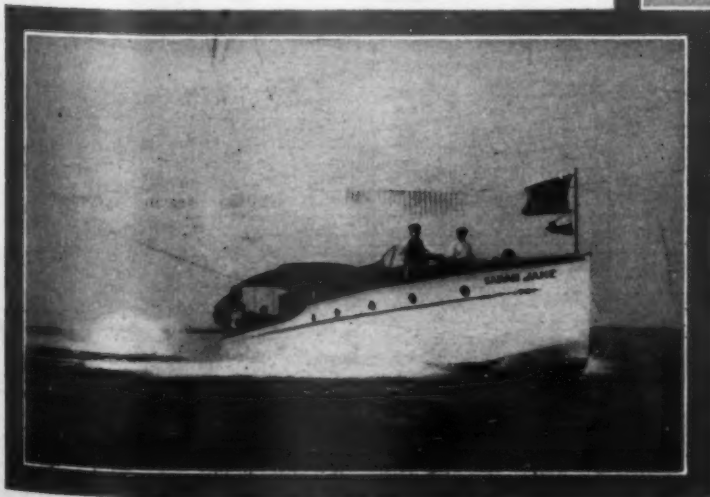
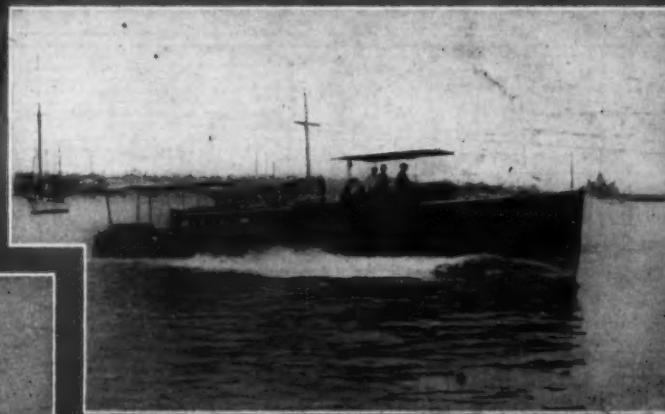
This attractive craft was designed and built by Wm. H. Hand at his factory in Westport, Mass. She is used by her owner at his summer home at Greenwich, Conn., and has proven to be an ideal cruiser for use on Long Island Sound, as she attains a speed of 23 m.p.h., and the necessary cabin arrangements for in-



The hand V-bottom Viva

VIVA, A. Gardiner Cooper's 1917 addition to his already big fleet of motor boats is a 40-footer having a beam of 8 feet 6 inches.

racing cruiser of the 1916 season. The interior



and deck arrangements of Viva are the exact duplicate of Countess, but the construction is slightly heavier, finished in white cedar, mahogany trim and all bronze fittings.

clement weather and plenty of open deck space for good weather.

THE effect of the military trend in cruiser design is more noticeable as the season reaches its zenith, the new designs having a tendency to eliminate the flowing curves and embellishments, and to strip a craft down to cleaner, sturdier lines, accentuating the strength and serviceability. Imova, illustrated in the lower right hand corner of this page,

(Continued on page 49)

MY IDEAL CRUISER

Trident, a 24 $\frac{1}{2}$ -Footer

The Ninth Design of the Series and the Smallest of MoToR BoatinG's Fleet of Cruisers—A Big Small-Boat With Great Possibilities

By Thomas Moore

TO the south and southwest of New York City lie waters which afford opportunities to many enthusiastic small boatmen of New York and New Jersey; Newark and New York Bays, the Kills, Raritan Bay, Sandy Hook Bay, and last of all that beautiful little river known as the Shrewsbury. A run out of Newark Bay or New York Bay to all of these points would not exceed fifty miles, and this is just about right for week-end cruising, which is about all the time the great majority can devote to the sport. What is needed then for this work is a small handy cruiser of good speed, aboard which two or three men can live in a fairly comfortable manner for two or three days at a time. Such a cruiser should be capable of venturing outside Sandy Hook in fine weather for fishing and pleasure sailing and be perfectly capable of weathering any sea which would be likely to pick up before the run to more sheltered waters could be made.

Bearing in mind then the purposes for which our cruiser was planned, the first thing to be done was to fix the minimum size at which

all the absolutely necessary requirements could be met. The principal dimensions worked out as follows:

Length over all..... 24 feet 6 inches
Beam 6 feet 3 inches
Draft 2 feet 1 $\frac{1}{4}$ inches

♦ The general arrangements are best explained by reference to the plans. The design being

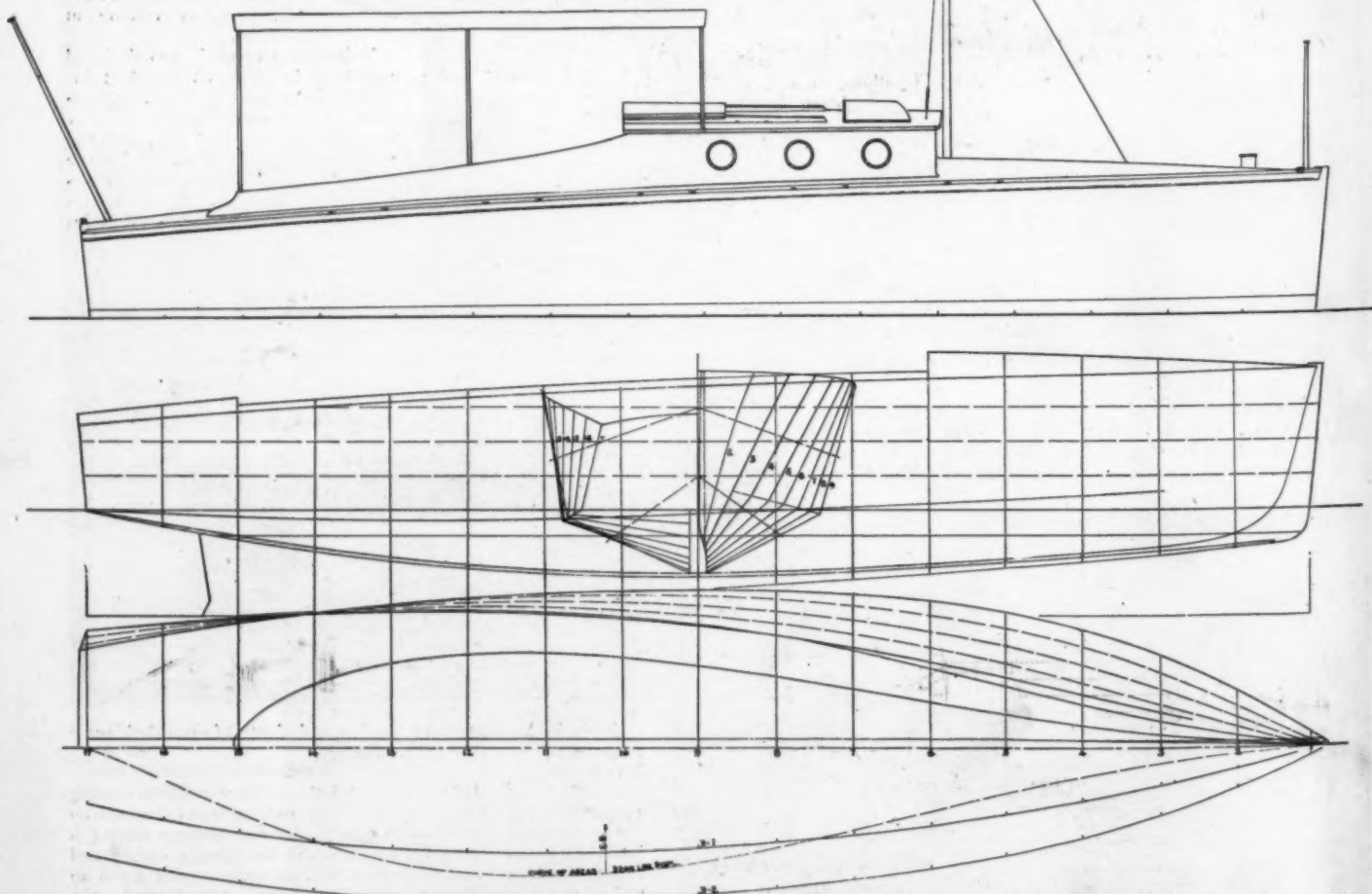
Ideal Cruisers Which Have Appeared in MoToR BoatinG

No. 1. Sunray	36-Footer	February Issue
No. 2. Spook	36-Footer	March Issue
No. 3. White Cap	26-Footer	April Issue
No. 4. Ruth	38 $\frac{1}{2}$ -Footer	May Issue
No. 5. Flashlight	30-Footer	June Issue
No. 6. Dawn	32-Footer	July Issue
No. 7. Cygnet	25-Footer	August Issue
No. 8. Jerry	40-Footer	September Issue

Several more excellent designs to come.

rather fine forward left a considerable space which was unavailable for berthing. This was utilized for anchor gear in the extreme forward end and for the ice-box and fresh water tank further aft. Access to the anchor gear is provided by a water-tight flush hatch in the deck forward. The location of the ice-box forward was considered desirable as a more complete insulation from the heat of the engine and of the stove, when this was going, was secured. The flaring sides of the forward sections further protect this location from the heat of the sun and results in a considerable saving of ice. The location of the water tank above the ice-box permits of a pipe coil being led through the ice-box to a tap on the forward bulkhead, giving cool drinking water at all times.

Aft of the forward bulkhead is the berthing space with two transoms with leather cushions. These can be extended sufficiently to form berths, which, while narrow owing to the dimensions of our little craft,



The upper view shows how Trident should look when afloat and the two lower illustrations give her lines reproduced to a scale of 5/16 of an inch to the foot

TABLE OF OFFSETS

DIMENSIONS IN FEET INCHES & EIGHTHS

STATIONS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
SKIN LINE	4-10-0	4-9-4	4-9-1	4-8-6	4-8-2	4-7-7	4-7-3	4-6-7	4-6-1	4-5-5	4-4-9	4-3-9	4-2-9	4-1-9	4-0-9	3-10-5	3-9-1
KNUCKLE LINE	—	—	2-5-2	2-4-2	2-3-3	2-2-3	2-1-5	2-1-0	2-0-1	1-11-5	1-11-0	1-10-5	1-10-0	1-11-1	1-11-5	2-0-3	2-1-1
RABBIT LINE	4-3-0	1-7-5	1-4-2	1-2-6	1-1-4	1-0-3	0-11-2	0-10-4	0-9-1	0-10-9	0-11-0	1-0-1	1-2-1	1-4-3	1-7-1	1-10-0	2-1-1
BOTTOM OF KEEL	—	1-3-7	1-2-3	1-0-6	0-11-3	0-10-0	0-8-4	0-7-3	0-6-2	0-5-1	0-4-0	0-3-0	0-2-0	0-1-0	0-0-0	1-9-6	2-1-1
DECK LINE	0-3-3	1-1-4	1-9-6	2-8-7	2-8-0	2-10-6	3-0-2	3-1-1	3-1-4	3-1-0	2-10-2	2-11-3	2-9-7	2-7-6	2-5-3	2-2-5	1-11-3
KNUCKLE LINE	—	0-4-3	0-8-2	1-0-5	1-4-4	1-8-2	1-11-5	2-2-3	2-4-6	2-6-4	2-7-4	2-8-1	2-8-1	2-7-5	2-6-5	2-5-2	2-3-5
LOAD WATER LINE	0-0-2	0-2-7	0-6-2	0-10-2	1-2-3	1-6-2	1-10-7	2-2-3	2-5-0	2-7-0	2-8-0	2-8-4	2-8-2	2-7-5	2-6-3	2-5-1	2-3-5
RABBIT LINE	0-1-4	0-1-4	0-1-5	0-1-6	0-2-0	0-2-0	0-2-0	0-2-0	0-2-0	0-2-0	0-2-0	0-2-0	0-2-0	0-2-0	0-2-0	0-2-0	0-2-0
DISCREPANCY	—	0-4-7	0-8-7	1-0-4	1-3-5	1-6-2	1-8-5	1-10-2	1-11-5	2-0-4	2-0-6	2-0-4	1-11-6	1-10-2	1-8-1	1-5-1	1-1-1
DISCREPANCY	0-2-1	0-9-2	1-3-7	1-9-2	2-1-2	2-4-3	2-6-7	2-9-0	2-10-5	2-11-5	3-0-1	3-0-1	2-11-3	2-10-0	2-7-7	2-4-7	2-1-2

Table of offsets and details for laying down the lines of Trident

are sufficiently comfortable for enthusiastic small boatmen. Under the forward deck closets are arranged to port and starboard for stowing clothes, etc. Under the forward transom, a section of which is removable, is a zinc-lined locker for provisions.

An advantageous feature of the design which may be remarked here is the excellent drainage of bilge water to an accessible point aft to which the form of our boat lends itself.

Lockers for stowage of ship's gear, accessible by removal of covers in the side transoms, are provided.

A small toilet space with a knockabout closet and usual fittings is located on the port side. This was secured at considerable sacrifice of other desirable features but cannot be conveniently done without. A curtain, together with partial bulkheads, screens this space from the main cabin.

The remaining feature below decks is the stove. This is not of the commercial oil-burning variety, but consists of a small, compact, two-hole frame with rings of various sizes to take pots or saucepans and prevent same from slipping. Under these are placed ordinary paint burners using gasoline for fuel. Some practice may be necessary at first in handling these torches, but they are very efficient and are recommended for their absence of oily odor. The location of the stove under the companion hatch permits a good proportion of the vapors of cooking to escape directly and affords more light than could be had in any other location, although with the number of airports shown our cabin is extremely bright. A further advantage in the location of the stove, and one that the writer has had occasion to observe, is the proximity

of the cabin door in the case of a recalcitrant burner.

No companion ladder is shown and is not considered necessary for the comparatively infrequent access through the cabin door. A small step fastened to the bulkhead could be fitted, however, if found necessary.

The engine is located clear of the cabin, and on a small boat such as this is the arrangement is believed to be eminently desirable. The engine hood has been made sufficiently commodious to provide access wherever needed in an engine of the type shown. This is further supplemented by a flush water-tight hatch over the reverse gear and inside shaft tube stuffing-box.

The steering wheel is located on the cabin bulkhead to port. This is of the auto type with an adjustment to permit of varying the angle so that the utmost comfort in steering may be secured whether standing or sitting.

No fixed seats are shown in the cockpit and experience has shown that no matter how commodious these may be they are sure to grow uncomfortable in the long run, or to be exposed to the sun, spray or otherwise untenable. Clear space then is provided with camp chairs which may be located to suit.

The fuel tank is carried under the after deck. The capacity is only about thirty-five gallons, but as this is sufficient for from fifteen to eighteen hours continuous running, the radius of action will be quite enough for a boat of this size. The tank is of copper and riveted, the rivet heads and seams being heavily soldered. Two fore and aft swash plates are fitted. Fine wire mesh is fitted in the filling

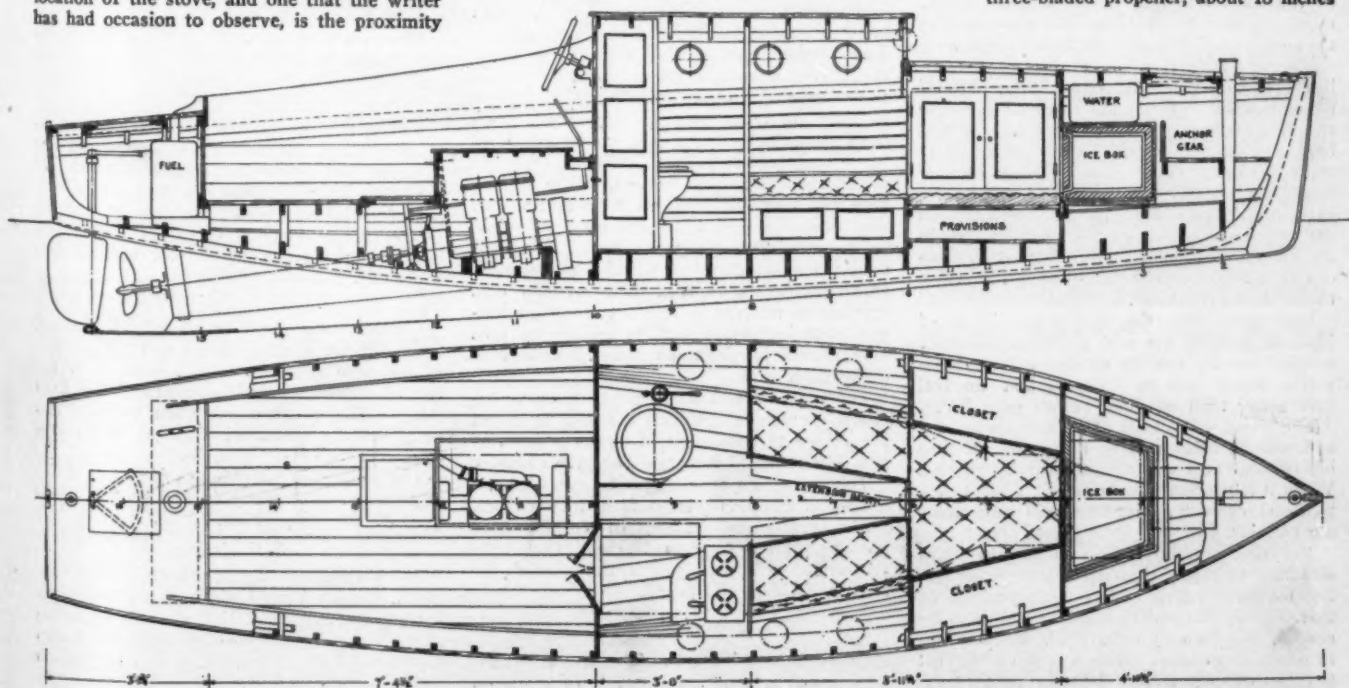
tube, which is flanged at the upper end, the flange bearing against but not being fastened to the lower surface of the deck plate frame.

The rudder port is of an inch and a quarter heavy brass pipe with a gland at the upper end. The rudder is of brass plate $\frac{3}{4}$ -inch thick, with the stock of $1\frac{1}{2}$ -inch diameter bronze shafting. A commercial galvanized iron quadrant is fitted and a flush water-tight hatch is provided in the after deck directly above. A bronze shoe is fitted and is necessary in the shallow waters of the Shrewsbury River.

The shaft tube is brass pipe of the same size as the rudder stock. A brass plate is brazed on the tube at the inboard end at the proper angle to bear evenly on the top of the upper keel. This is a difficult job but can be done by an auto repair man with an oxy-acetylene outfit much cheaper than a similar fitting of cast bronze.

The propelling outfit shown consists of a two-cylinder, two-cycle, Reid engine, manufactured by the Joseph Reid Gas Engine Co., of Oil City, Pa. This engine is perhaps very little known on the coast but is a very serviceable machine. This company makes a specialty of engines for the oil regions of Pennsylvania and Oklahoma and these engines simply have to work. This applies equally to their marine type. The size of cylinders is $4\frac{1}{2}$ inches by $4\frac{1}{2}$ inches and develop 800 r.p.m. The weight with reverse gear is 445 pounds.

The curves of effective horsepower have not been worked out for this particular model, but from performance with this engine in a similar boat it would appear that a three-bladed propeller, about 18 inches

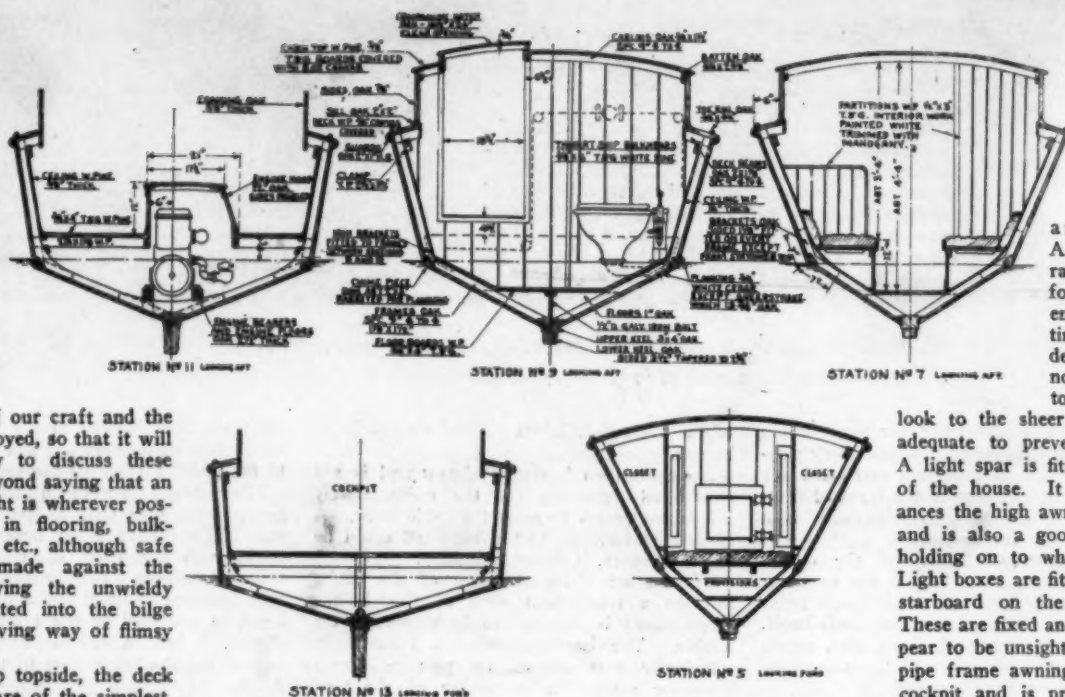


Interior arrangement plan and inboard profile of Trident. Scale 5/16 inch equals one foot

by 20 inches in diameter, might be suitable, giving a speed of approximately twelve miles an hour.

Examination of the plans, and particularly the sheet devoted to amidship and type sections, gives all the necessary information relative to the construction of our craft and the materials employed, so that it will be unnecessary to discuss these points here, beyond saying that an excess of weight is wherever possible avoided in flooring, bulkheads, lockers, etc., although safe provision is made against the shame of having the unwieldy guest precipitated into the bilge through the giving way of flimsy floor boards.

Returning up topside, the deck arrangements are of the simplest. Forward a king post serves all requirements of mooring and



Sectional views at various stations. Scale 5/16 inch equals 1 foot

anchoring. A small toe rail is fitted for convenience in getting about the decks. This is not so high as to give a heavy

look to the sheer and yet is adequate to prevent slipping. A light spar is fitted forward of the house. It rather balances the high awning top aft and is also a good thing for holding on to when forward. Light boxes are fitted port and starboard on the house top. These are fixed and do not appear to be unsightly. A fixed pipe frame awning covers the cockpit and is provided with the necessary back and side curtains.

Motor Boatmen Needed for Merchant Marine

A Series of Articles to Begin in the November Issue of MoToR Boating—Planned Especially to Prepare Amateurs for Real Sea Service

UNCLE SAM needs navigators both in the Navy and Merchant Marine and MoToR Boating is to do its best to give the motor boatmen of the country an opportunity to prepare themselves and to qualify for these positions.

We have published numerous articles on the more elementary phases of the subject during the last year which more properly belong to the subject by piloting and seamanship. The book recently published by MoToR Boating entitled "Practical Motor Boat Handling, Seamanship and Piloting," has also helped thousands of motor boatmen in the fundamentals of the subject and to obtain a much higher rating in the Naval Coast Defense Reserve than otherwise would have been possible.

Attempts have been made by many to publish articles on the more advanced side of navigation but we do not know of a single successful effort. All of them have either been too brief or so poorly written as to make them practically worthless from a motor boatman's point of view. Most of the articles have relied upon advanced mathematics and the use of costly and complicated instruments and have necessitated the purchase of numerous text books and tables of doubtful value to the motor boatman.

Beginning with the November issue of MoToR Boating we will publish a series of articles on the subject of motor boat navigation which will be different and we feel sure better than anything before published.

The series will consist of at least six articles and will be illustrated by means of halftone illustrations in a way never before attempted. When it is necessary to bring out a point of a technical character diagrams will accompany the pictures.

The readers who really follow the series will have to supply themselves with Bowditch, but the first article will be independent of that work. A nautical almanac will also be needed, and the only other book which it will be desirable to have will be a copy of MoToR Boating's book, "Practical Motor Boat Handling, Seamanship and Piloting." A synopsis of the proposed series which will start in the next issue of MoToR Boating is as follows:

First Article

General introduction to the subject with a statement of the object of this series of articles which is to enable the motor boatman to use his craft with greater safety and take an increased pleasure and pride in his ability to navigate his craft. The articles also are planned so as to give the motor boatman some insight into the methods used in navigating larger craft; so that should he be called upon to do this, his small boat experience might stand him in good stead for the larger work.

The series is not to be an "Epitome" as seamen call text books on navigation, but a brief set of articles designed to get the yachtman interested, show him that navigation is not a science that offers any real difficulties to the man of average intelligence, and lastly to clear up those parts of Bowditch which have been written for the consumption of "civil engineers only."

Materials and books needed. (We plan to have the series of such a nature that a man who does not have a sextant may get something out of it. We shall take up in a later article the question of putting a discarded sextant into commission. The writer's own instrument was the gift of a retired sea captain and was condemned as useless by men who should have known better. It is now doing good work.)

The compass and its uses. Differences between the simple outfit on a motor boat and the elaborate equipment of ocean-going vessels. The standard compass. The gyro compass.

The correction of compass courses and the finding of compass courses from true courses.

Simple graphical methods of working dead reckoning on a large scale chart (polyconic projection) with parallel rulers or course protractor, dividers and pencil.

Second Article

Other kinds of charts. The mercator projection and why it has no scale of miles on it and how we use it nevertheless. Extension of previous method of working dead reckoning to cover the mercator projection.

Working dead reckoning by traverse sailing and middle latitude sailing.

Taking departures. The bearing finder described in "Practical Motor Boat Seamanship" and its big brother the pelorus. Use of tables 5A and 5B in Bowditch for determining distance from a fixed object.

Third Article

Small scale charts of entire oceans and their uses. Long courses and great circle sailing. Gnomonic projections or great circle charts. Prof. Arie's method of laying off a great circle on a mercator projection. The pilot charts of oceans published monthly by the Hydrographic office.

Mercator sailing. Solution by the traverse tables and the more accurate logarithmic method.

Fourth Article

The sextant considered as what it really is, an instrument for measuring angles and not a mysterious device for "taking the sun."

Putting an old sextant into commission. Horizontal angles with the sextant, and the location of a vessel by means of them. The horizontal danger angle and the vertical danger angle.

Fifth Article

Latitude by a meridian altitude of the sun. Introducing the chronometer and the problem of when to take a meridian altitude of the sun. Latitude by meridian altitude of a fixed star. (The problem of when to take this sight will be discussed later as it involves sidereal time.)

The parallel of latitude considered as a line of position. The many uses of such a special kind of line of position.

Sixth Article

The chronometer again and the chronometer sight. Use of a good watch as a chronometer for practice work. Rating a watch by means of a fixed star with no other instrument than your neighbor's ridge pole. Lines of position and Sumner's method.

Determination of deviation of the compass by amplitudes, altitude azimuths, and the azimuth tables.

Yard and Shop

A V-Bottom Wave-Collecting Cruiser

Muirmaid V may be said to be truly representative of the 1917 style in express cruiser design. The influence of the military trend, however, while it has effected the design, has in no sense been permitted to interfere with the lighting, and Muirmaid V may be considered a really comfortable, well-ventilated 60-footer. The beam of 14 feet permits room in which one may feel at home.

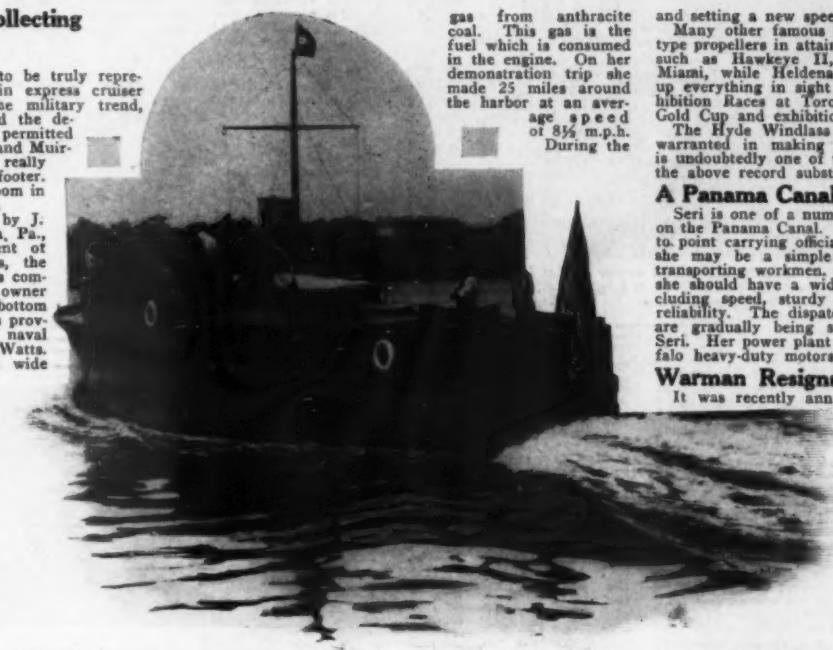
Muirmaid V was designed by J. Murray Watts, of Philadelphia, Pa., for Pierre A. Proal, president of the Red Bank Yacht Works, the builders of the craft. She was completed and delivered to her owner late in June. She is of the V-bottom wave-collecting type which has proven so successful in recent naval patrol boats designed by Mr. Watts. The sides are high, with a wide flare, giving considerable fore-deck space. An allowance of 10 feet has been made on the rear deck for wicker chairs to accommodate a party.

The engine-room placed amidships houses a six-cylinder Sterling motor which exhausts through the stack, and includes a crew's toilet, a work bench and two transom seats, convertible into bunks for four persons. The entrance is through a hatch, which, with two large cowl ventilators and six port lights, keep the room comfortably aired. Directly aft is the galley furnished with a built-in refrigerator on one side and a stove and sink on the other.

In the main saloon are three berths, a dresser, lockers and a glass buffet. The entrance, or exit, leads to the after deck under which are two large storage tanks and storage space accessible through a hatch.

The owner's stateroom forward is finished in white enamel panelling with mahogany trim and has one double berth, two Pullman berths, and a six-drawer bureau with mirrored doors, back of which is a locker. This room is accessible from the bridge as well as through the engine-room. A large toilet room adjoins. This room and the galley are finished in white tiling.

The hand work of Muirmaid V is exquisite. All the outside joiner work is of the best Honduras mahogany, varnished to a lustrous polish. The interior finish is in mahogany and white, and is richly decorated.



Muirmaid V, owned by Pierre A. Proal, was designed by J. Murray Watts, and built by the Red Bank Yacht Works. She is equipped with an eight-cylinder Sterling motor with which she attains a speed of 17 m.p.h.

entire trip only 260 pounds of coal were burned to furnish power through the gas producer, according to the figures of the engineer and Arthur W. Fonda, sales manager of the Nelson Blower & Furnace Co., who was in charge of the trip and demonstration.

The coal cost just \$1.12, which was the entire cost for fuel to drive the boat over the 25 miles.

A Specially Designed 17-Footer

The cruiser shown in one of the accompanying illustrations is the new 17-footer built by the Lewis Boat Co., of Oshkosh, Wis., after a special design determined by Captain Lewis after a series of expensive experiments.

A feature of this attractive cruiser is that it makes a speed of 27 m.p.h. which is remarkable for a boat equipped with only 25 h.p. The motor installation consists of Twin-Screw 25 h.p. Universal motors, the starboard engine turning to the right and the port motor to the left, at a rated speed of 1,800 r.p.m., the two motors having a total weight of 600 pounds are equipped with bulkhead controls and air starters.

The lines of the boat are so designed that it will take a heavy sea without spraying the occupants and is exceptionally staunch at low as well as at high speeds.

Hyde Propellers Prove Their Efficiency

When Miss Detroit II won the Gold Challenge Cup at Minneapolis, in August, she added another to the long record of victories won by boats equipped with Hyde turbine-type propellers.

For four consecutive years Hyde-equipped speeders have won the Gold Challenge Cup—the most important speed trophy in the motor boat world. In 1914, Baby Speed Demon II won the highly-prized trophy. In 1915, it was carried away by Miss Detroit. The year 1916 saw Miss Minneapolis show her heels to all comers and now 1917 finds Miss Detroit II carrying off the coveted prize. All of these boats were equipped with Hyde turbine-type propellers which forms an unsurpassed record for propeller efficiency and consistency. In addition to winning the Gold Challenge Cup Miss Detroit II also took the honors at the Thousand Islands capturing the Challenge Cup

and setting a new speed record for the course.

Many other famous boats have used Hyde turbine-type propellers in attaining recognition in speed circles such as Hawkeye II, Peter Pan VIII, and Miss Miami, while Helden, also Hyde-propelled, cleaned up everything in sight at the Canadian National Exhibition Races at Toronto, winning the Great Lakes Gold Cup and exhibition trophies.

The Hyde Windlass Co. of Bath, Me. is certainly warranted in making the statement that the Hyde is undoubtedly one of the fastest propellers made and the above record substantiates such an assertion.

A Panama Canal Dispatch Boat

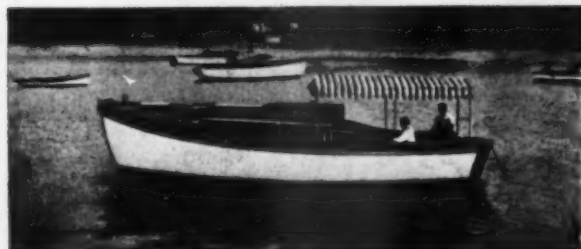
Seri is one of a number of dispatch boats in service on the Panama Canal. At times she dashes from point to point carrying officials on board, and the next day she may be a simple work boat towing barges or transporting workmen. It is therefore necessary that she should have a wide variety of good qualities including speed, sturdy pulling power, and above all reliability. The dispatch boats of the Panama Canal are gradually being standardized to the design of Seri. Her power plant consists of two 60-70 h.p. Buffalo heavy-duty motors.

Warman Resigns from Scripps

It was recently announced that Ray V. Warman, secretary, and one of the directors of the Scripps Motor Co., of Detroit, Mich., has resigned in order to establish himself independently in the general export business.

Mr. Warman started an export business in Detroit in 1907 conducting the foreign sales of several manufacturers principally in the automobile and marine lines, the Scripps company being one of the accounts handled. The foreign business of that company grew so rapidly that in January 1915, when the company was incorporated, Mr. Warman was elected secretary and director dis- posing of his other business interests in order to devote his entire time to the Scripps line.

Mr. Warman will continue in the same offices at 17



One of the many attractive craft designed and built by W. J. Moxley, of Cos Cob, Conn. The decks, combings and interior are finished in mahogany.

The boat has been inspected by the naval authorities of the Third District and formally passed upon as being eminently satisfactory for patrol service.

Galusha Gas Producer Test a Success

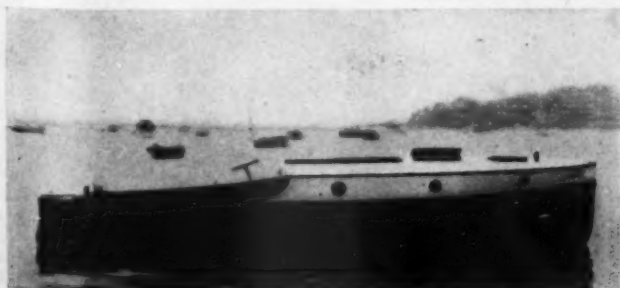
A practical demonstration of the operation of the Galusha gas producer, manufactured by the Nelson Blower & Furnace Co., of Boston, Mass., was given to a number of representatives of the various manufacturing firms, and the boat employed for the occasion was the B. G. Purdy, a boat equipped with a Galusha gas producer.

The B. G. Purdy is a combination water boat and tug of average length and weight. Installed in her engine-room is a Galusha gas producer which furnishes



Seri, powered with a 60-70 h.p. Buffalo heavy-duty motor is a dispatch boat now in service on the Panama Canal.

Battery Place, New York City, where the Scripps export business has been conducted during the last year.



Anne, a 27-foot cruiser built by Stearns & McKay, of Marblehead, Mass. She is powered with a 17-25 h.p. Sterling motor and has a speed of 12½ m.p.h.



The 63-foot Hupa powered with an eight-cylinder Van Blerck motor has been approved and accepted by the government for patrol service. Her speed is 28 m.p.h.



James H. Morris, of Wilmington, Del., is the proud owner of Lu Lu, a 39x10x2-foot cruiser. She was built by the C. C. Smith Boat & Engine Co., and is powered with a 40-60 h.p. Buffalo

The H. M. S. Propeller

In the construction of the H.M.S. propeller, manufactured by the Toy Tinkers, of Evanston, Ill., the blades are formed integrally on a hub member, there being but one blade for each hub. The whole is held in place by a nut at the end of the shaft, and the shaft is so designed as to accommodate four such members. In case four blades are not required, the space left vacant is filled in by a loose hub. The ends of the hub members are serrated, toothed, or indented to as to provide uniformly spaced lugs or projections every 30 degrees. It is claimed that no two blades revolve on the same plane, and because of this fact the shaft is lengthened to accommodate the four members, which additional length is about double the length of the hub of an ordinary propeller.

It is declared by the manufacturers of the H.M.S. that it has been designed to alleviate the necessity of putting the boat out of commission while another propeller is found. To accomplish this, a shaft is provided for a four-blade set, so that in case an over-rated motor is equipped with a propeller which is too small, additional resistance surface may be obtained by simply removing a loose hub and adding another blade.

While no tests have been made for cavitation, theory bears out the contention that because no two

type. It is a question worthy

Addition to Ericsson Factory

The Ericsson Mfg. Co. of Buffalo, N. Y., has just broken ground for an addition to their plant. The new building, which will start manufacturing in October, will enable the doubling of the plant's present productive capacity. The 100 per cent. increase in manufacturing facilities realized by the Ericsson company is due to the

great demand for the Berling magneto, which is now

the Gray four-cycle Model D and Model F motors, and this company reports that they have had exceedingly good results with it, never having had a chain break or get out of alignment. Such a report is significant and well worthy of consideration.

The labor of the chain is slight, being used merely to drive the pump shaft and magneto, and has a factor of safety of over 100 per cent. The great advantage of the silent chain over the gear drive is the fact that it runs quietly and has none of the unpleasant grinding noise incident to the gear drive. The Gray Motor Co. will be glad to hear from anyone who favors the gear-driven of deep consideration.

tiss aeroplane, recently said this in regard to the Buffalo-made Berling magneto:

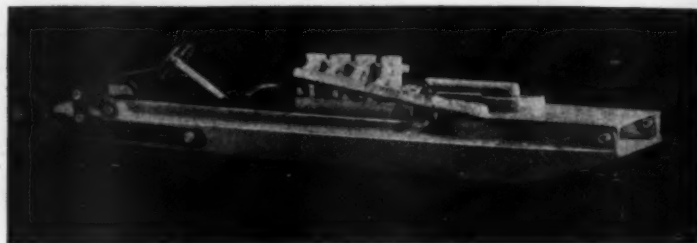
"In response to your request for my personal opinion of the Berling magneto, I can earnestly say that the high quality of your product has been the most important factor in the successfully rapid development of our aeronautical motors during the last few years."

"With the foreign supply of magnetos shut off from this country, it was imperative to the success of aviation in this country that a magneto be developed equal to the rigid requirements necessary. I believe that in your product we have an equal if not a superior article to those which were being supplied to us by foreign manufacturers, and by their continual use on our motors, have proven them equal to the demands of our customers."

Molly B VI

Marblehead—and one conjures visions of restless blue, dashing foam white, receding only to again and again hurl another and another line of rising peaks against the rocks. The boulders, covered with moss, reflect countless purple shadows in the deep crevices. Here the summer colony in cool white linens, watch the flitting sailing craft tack to and fro. Occasionally a flashing speeder pares the ultra-marine, sending a shower of glittering foam aside the furrow. Molly B VI, a streak of green and red and iridescent white, with a musical rumble, hums rustling by the lazy gulls.

This attractive 22-footer combining speed with seaworthiness was designed by S. H. Brown, and built by the Brown Boat Works. Molly B VI is the fastest displacement boat of her power at Marblehead. She is



A new type of Kellogg Pneumatic air-propelled hydroplane. A steering column controls both rudder and valves

equipped with a Sterling 20-35 h.p. motor with which she attains a cruising speed of 26 m. p. h., and her owner, N. R. Blaney, happily enjoys all the pleasure of boating and the attendant beauties, even if it hasn't occurred to him to write of them.

Lu Lu, a 39-Footer

One of the illustrations on this page shows a 39-foot motor boat having a beam of 10 feet and a draft of 2 feet 9 inches. She was built by the C. C. Smith Boat & Engine Co., of Algonac, Mich., for James H. Morris, of Wilmington, Del. The boat has just been completed and is powered with a 40-60 h.p. Buffalo cruiser and run-about engine. Not

only is Lu Lu, as the boat has been named, most comfortably arranged below decks, but it is expected that she will have considerable speed due to her motor installation.



The Galusha gas producer



B. G. Purdy, the tug in which was demonstrated the efficiency of the Galusha gas producer, manufactured by the Nelson Blower & Furnace Co., of Boston, Mass.

blades revolve in the same plane cavitation must necessarily be absent, or at least greatly reduced. This feature should appeal to speed enthusiasts.

Silent Chain Versus Gear Drive

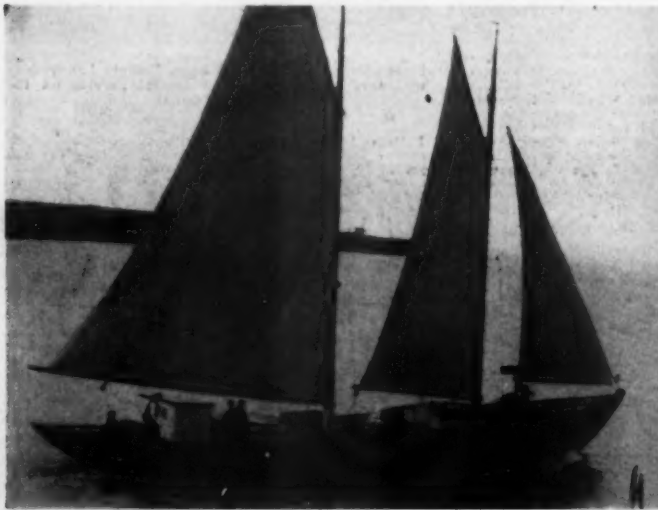
There has been much discussion at various times as to the relative merits of the silent chain drive over the gear drive and vice versa, when used on marine engines. The silent chain drive is used on

the credit of engines equipped with the Berling. When the express cruiser Countess ran 187 miles in 7¼ hours, a Berling furnished the spark for the motor. The enlargement of the factory now going on is a direct result of the increased business that has come to the Ericsson Mfg. Co. almost without solicitation, simply because the magnetos that were put on the market made good.

Glenn Curtiss, inventor and developer of the Cur-

Hupa, a Government Patrol Boat

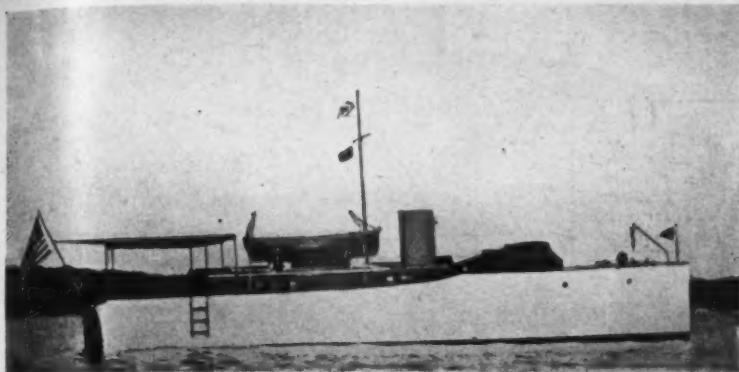
Immediately after war was declared and all eyes were anxiously scanning our coasts for the first U-boat appearance, there developed a demand for high-speed



Cora & Gertie, owned by Crocker Bros., of Freeport, Nova Scotia, is a 74-foot fishing boat powered with a 36 h.p. Gray-Prior Model D engine



Captain Lewis, of the Lewis Boat Co., of Oakkosh, Wis., is the owner of this attractive 17-footer. She is capable of 27 m.p.h.



Satis A, owned by Edward C. Crosssett, was designed by Fred D. Lawley and built by Geo. Lawley & Son Corp., of Neponset, Mass. Powered with two Model F six-cylinder 145 h.p. Sterlings, she makes a speed of 22 m.p.h.

power boats for coast patrol duty and despatch work. When the government agents made their first survey of available boats, Hupa immediately attracted their attention. Designed by Arthur Binney and built by Geo. Lawley & Son Corp., of Neponset, Mass. This boat is staunch and fast. Examination showed that her hull is in perfect condition and all that was required was a modern high-speed motor to put her into actual service. The offer was at once made to her owner, Louis T. Carey, of Boston, Mass., provided he would install an engine that would meet with the government requirements and give them satisfactory speed. Mr. Carey communicated directly with the local office of the Van Blerck Motor Co., and ordered an eight-cylinder 200-h.p. motor with full electric starting and lighting apparatus, to be shipped from the New York office within 24 hours.



Minas is a Brazilian cattle schooner owned by Lima & Reis, of Para, Brazil. A 20-22 h.p. Buffalo motor gives her a speed of 5 m.p.h.

On the same day that the installation of the motor was completed a demonstration run was made with government officials aboard, and it was easily determined that Mr. Carey's confidence had not been misplaced, for Hupa took them down the harbor at a 28-mile clip, and the inspectors immediately accepted the boat as government property, running between the various patrol stations and acting as despatch boat for the First Naval District Patrol Squadron. Hupa is 63 feet long with 8-foot beam and draws approximately 3 feet 6 inches of water when underway, and it is claimed that her speed of 28 m.p.h. can be maintained for any length of time required.

Important

It has recently come to the attention of the Navy that certain persons representing themselves to be manufacturers agents or brokers have been writing to manufacturers that they are in a position to obtain contracts for them, obtain more expeditious payments, and even have the goods of particular manufacture accepted for Government use. These statements have in some cases had direct reference to purchases being made by the Navy under competitive bidding and public competition and are, therefore, altogether without foundation.

There has been no change in the methods previously pursued by the Navy of purchasing materials after public competition except in those few industries in which the demand exceeds production, and for this or other similar reason the Navy allots its requirements among the trade subject to final governmental price fixing.

On account of the volume of their business, here, some concerns have experienced local factory representatives; such men being of real service as they are qualified to act for the contractor. A representative who does not know the manufacturer's product can be of no useful service.

It is desired that all firms regularly manufacturing or marketing products used by the Navy bid direct and not through the medium of so-called manufacturers' agents or representatives.

Bidding through a third party inevitably leads to misunderstanding and difficulties which can be obviated by direct bidding. Each bidder may feel assured of receiving fair and equitable treatment, and the purchasing officers will look out for the interests of the absent bidder in this respect far more thoroughly than any manufacturer's agent or representative possibly could.

A recent complaint has been received from one

record regarding all its contracts is open to inspection at any time by parties interested.

A Sterling 27-Footer

Anne is 27 feet long by a beam of 7 feet and a draft of 2 feet. She isn't so fast that you thirst for more speed. Her four-cylinder Sterling motor drives her 12 miles per hour, and she runs smoothly. She was built by Stearns & McKay, of Marblehead, Mass., and for a boat of her type is most complete. Her arrangements provide sleeping quarters for four persons in the main cabin and could even be made to comfortably accommodate six persons by incorporating a stanchion top and side curtains over and around the rear cockpit.

The motor is placed amidships, under a removable hatch, with a locker on either side. The completely equipped galley includes an ice chest, stove, and

manufacturer to the effect that he had submitted a bid through an agent who was the lowest bidder and who, obtaining the contract, placed the business with another firm. Such a condition can be obviated if business firms will co-operate with the Navy and bid direct.

The Navy believes in publicity both before bids are received and after awards are made. The entire

dish racks in the latest approved style, as well as a Hoosier Kitchen Cabinet. Lavatory accommodations, in the extreme bow, and electric lights, are part of the equipment. Controls are located on the auto-type steering wheel.

The designer of this craft was a real boatman. He knew the desirability of ventilation, and you will find six large portlights, a skylight, and two large ventilating cowls in the cabin.

Cora & Gertie

The 74-footer shown is one of the accompanying illustrations

has a wide beam of 16 feet 4 inches and a draft of 7 feet. She is powered with a 36 h.p. Gray-Prior Model D-4 and operates on kerosene. This motor turns a 26-inch diameter by a 24-inch pitch three-bladed Hyde propeller at 500 r.p.m. With this motor installation she is capable of a speed of 7 m.p.h. She is used as a fishing boat by her owners, Crocker Bros., of Freeport, Nova Scotia.

A Brazilian Cattle Boat

The owners of Brazilian cattle boats are gradually coming to recognize the fact that using gas engines for auxiliary power is good economy. One of the most

(Continued on page 49)

Personalities

Seventeen years ago, in a tiny garage and repair shop in Rockford, Iowa, was born the idea which has reached maturity in the Duesenberg marine motor of to-day. Here it was that Fred S. Duesenberg built the first gasoline motor, a clumsy little motor-cycle engine which was exhibited at the first Chicago Show. Even in these formative days the motor gave promise of a budding genius in design which has been fully realized.

Catching a glimpse of the tremendous future of the automobile industry, Fred S. Duesenberg organized the Mason Motor Co., of Des Moines, Iowa, and spent a few years bringing out what was, in those days, a first class machine. But this kind of thing didn't keep Fred S. busy enough, so in 1910 he branched out into the automobile racing game, as it seemed to offer the greatest field for the development of ideas and rapid and severe trial of their value. The first four-cylinder Duesenberg engine was built mostly in the basement of the Duesenberg home and took over a year to complete. However, it was a real motor and embodied improvements which have endured the rigors of many racing campaigns without a reason for any important change. This original motor was still propelling a car with a truck body on it at 50 miles an hour through the outlying districts of Chicago this summer. Fred Duesenberg entered his first car in Indianapolis Race of 1912 and was scooped at for doing so, as his motor capacity was only 230 cubic inches as against the 450 cubic inches of the other cars. However, he got 78 m.p.h. out of the car in that race and eventually forced the abandonment of the 231 cubic inch class races.



Fred S. Duesenberg

The success of the Duesenberg racing motor since then has been so outstanding that practically everybody knows the principle details. It is probably safe to say that at least 70 per cent. of all cars on the dirt and board tracks to-day in America are Duesenberg equipped.

Development of the gasoline motor for marine purposes has gone hand in hand with its perfecting in the automobile field and when a prominent Chicago sportsman determined to do a seemingly impossible thing—produce a sixty-mile boat—it was natural for him to turn to Fred Duesenberg to produce the power plant for him. The problem was a tough one, but five months from the day the motor was first put on paper the engines were turning over in Disturber IV, the fastest 40-foot hydroplane yet developed in this country.

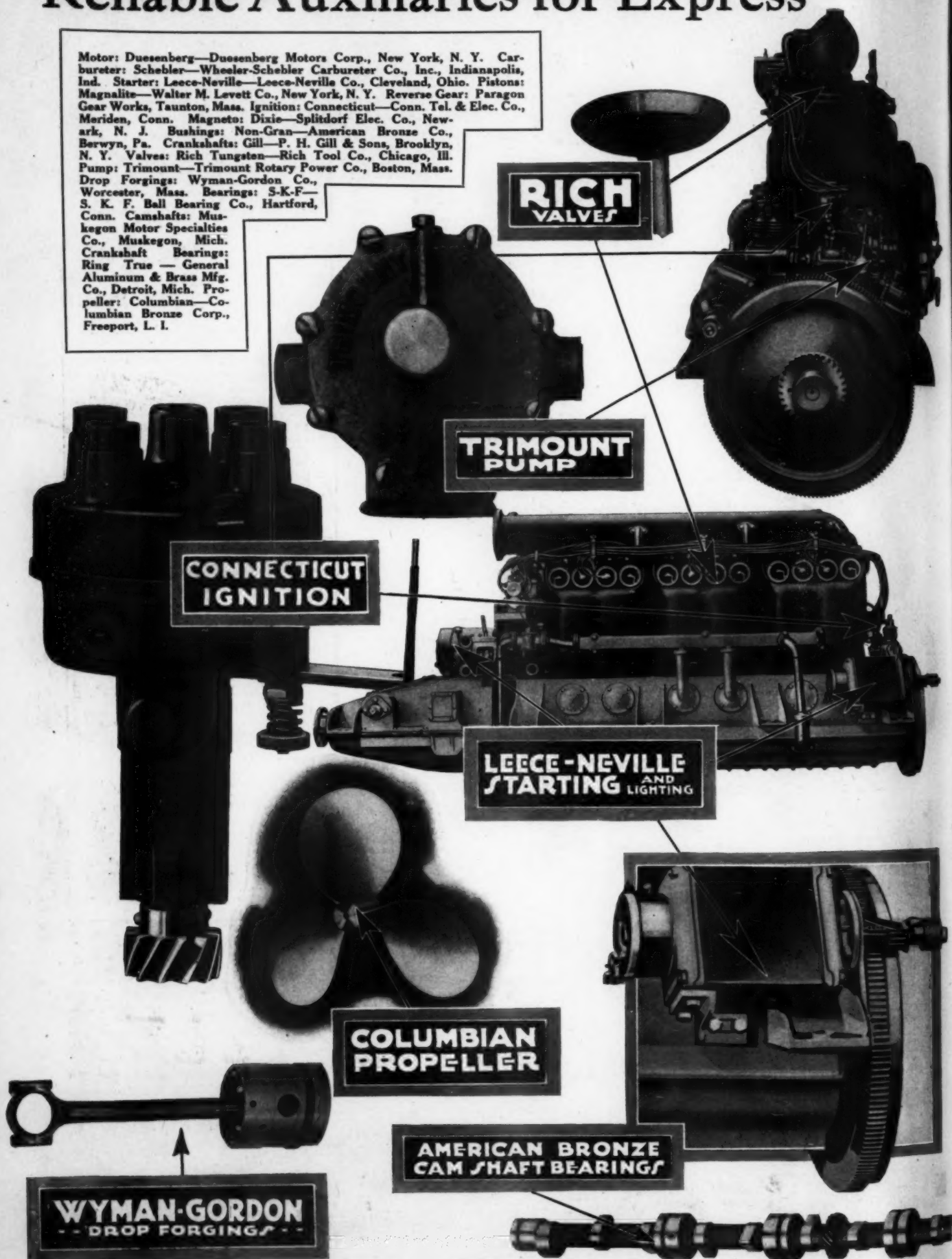
That was the start of the Duesenberg marine engine. Soon after the successful results obtained in the Disturber the old Loew-Victor Engine Co., of Chicago made a deal with Fred Duesenberg to become their chief engineer. He designed for them a six-cylinder and an eight-cylinder 6 1/4-inch by 7 1/4-inch marine engine. He also designed a four-cylinder aeroplane engine, a six-cylinder aeroplane engine and a series of automobile motors. Last fall the Loew-Victor Engine Co. was merged into the Duesenberg Motors Corp. who have just moved into their new plant at Elizabeth, N. J., where all types of their motors will be manufactured in quantity.



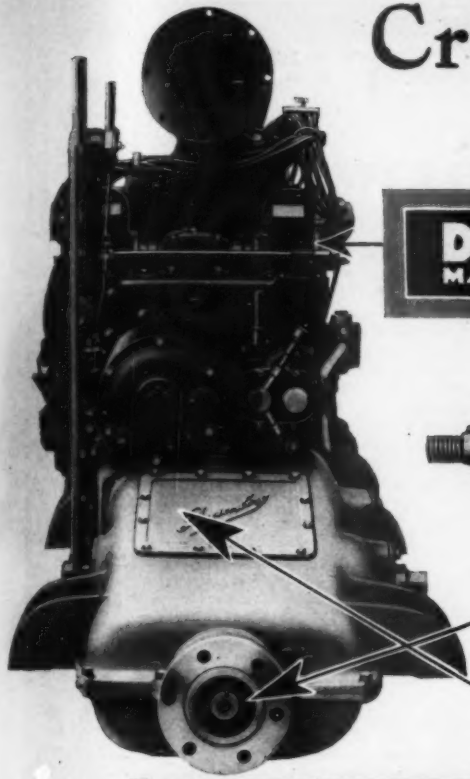
A high-speed six-cylinder Sterling turning a three-bladed 21-inch diameter by 45-inch pitch Harthan propeller gives Florence E. II, a speed of 30 m.p.h.

Reliable Auxiliaries for Express

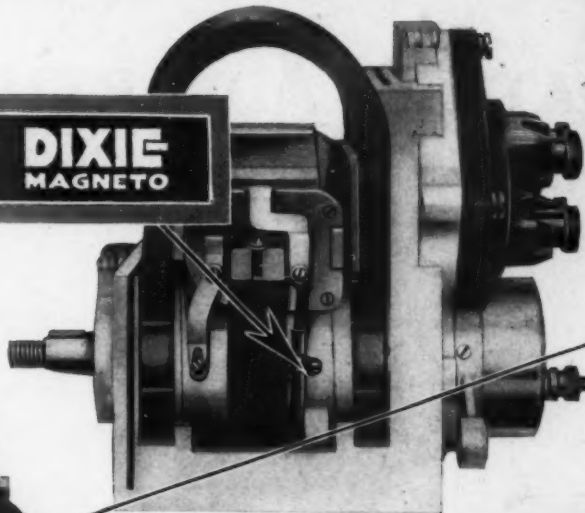
Motor: Duesenberg—Duesenberg Motors Corp., New York, N. Y. Carbureter: Schebler—Wheeler-Schebler Carbureter Co., Inc., Indianapolis, Ind. Starter: Leece-Neville—Leece-Neville Co., Cleveland, Ohio. Pistons: Magnalite—Walter M. Levett Co., New York, N. Y. Reverse Gear: Paragon Gear Works, Taunton, Mass. Ignition: Connecticut—Conn. Tel. & Elec. Co., Meriden, Conn. Magneto: Dixie—Splittorf Elec. Co., Newark, N. J. Bushings: Non-Gran—American Bronze Co., Berwyn, Pa. Crankshafts: Gill—P. H. Gill & Sons, Brooklyn, N. Y. Valves: Rich Tungsten—Rich Tool Co., Chicago, Ill. Pump: Trimount—Trimount Rotary Power Co., Boston, Mass. Drop Forgings: Wyman-Gordon Co., Worcester, Mass. Bearings: S-K-F—S. K. F. Ball Bearing Co., Hartford, Conn. Camshafts: Muskegon Motor Specialties Co., Muskegon, Mich. Crankshaft Bearings: Ring True—General Aluminum & Brass Mfg. Co., Detroit, Mich. Propeller: Columbian—Columbian Bronze Corp., Freeport, L. I.



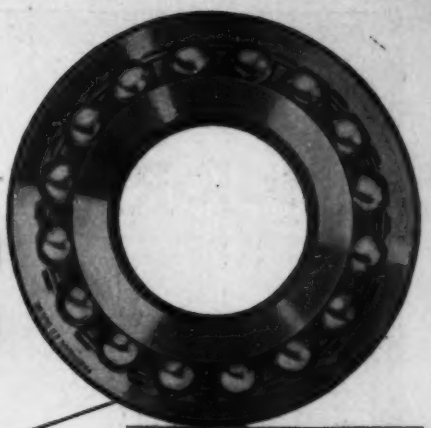
Cruiser Motors



DIXIE
MAGNETO



PARAGON
REVERSE GEAR



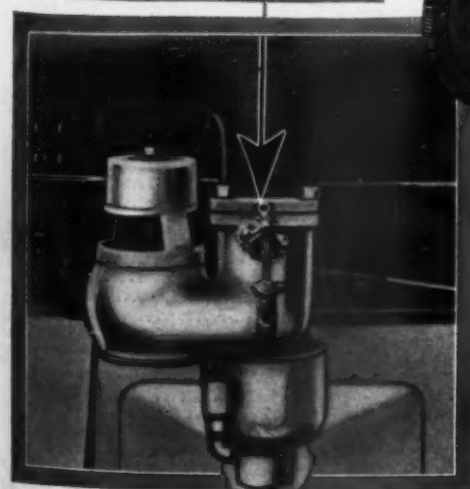
S.K.F.
BEARINGS



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CARBURETER



MAGNALITE
PISTONS



MUSKEGON
CAM
SHAFT



GILL CRANK
SHAFT

GENERAL ALUMINUM
BRASS CO.
CONNECTING ROD
AND CRANKSHAFT
BEARINGS



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Photograph by Gray Robinson, Miami, Fla.

This Advertisement Is About *Your* Boat!

Week after week we have been reproducing testimonial letters from other boat-owners telling about Valspar on *their* boats. Now let us tell you about Valspar on *your* boat.

Valspar won't turn white on *your* boat.

Fresh water, salt water, hot water, oils, grease, chemicals—things that mar or ruin the appearance of boats finished with ordinary varnish—none of these will affect *your* boat if it is protected with a coat of Valspar.

Valspar is the one absolutely waterproof varnish. It will keep its finish through the season. It dries free of dust in two hours, and hard in twenty-

four hours. It's elastic, tough and won't scratch white.

It's the right varnish for your boat. Valspar is also used on aeroplanes by the Curtiss Company and others. Wherever it is used Valspar surprises every one by its toughness, staying powers and complete

defiance of salt or fresh water. There is no substitute for Valspar.

For boat painting, don't forget Valentine's Yacht White or Yacht Black and Valspar Bronze Bottom Paint.



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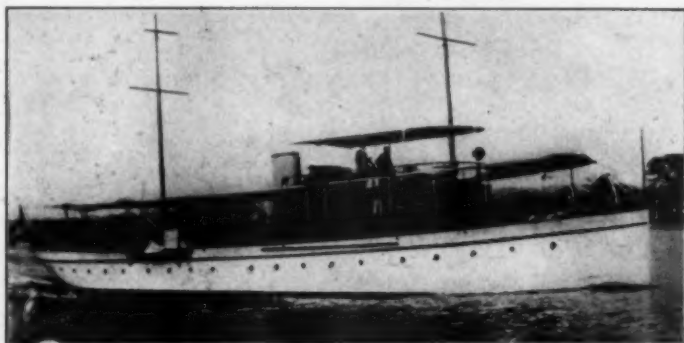
Naval Architects
and
Yacht Brokers

COX & STEVENS

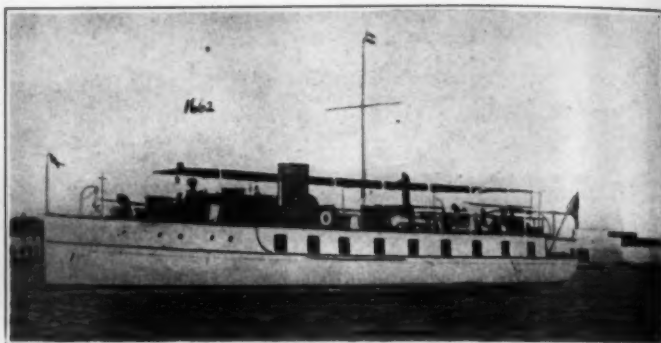
15 William St., New York
Telephone—1375 Broad
Cable—BROKERAGE

We have a complete list of all steam and power yachts, auxiliaries and houseboats available FOR SALE and CHARTER. A few are shown on this page. Plans, photographs and full particulars furnished on request.

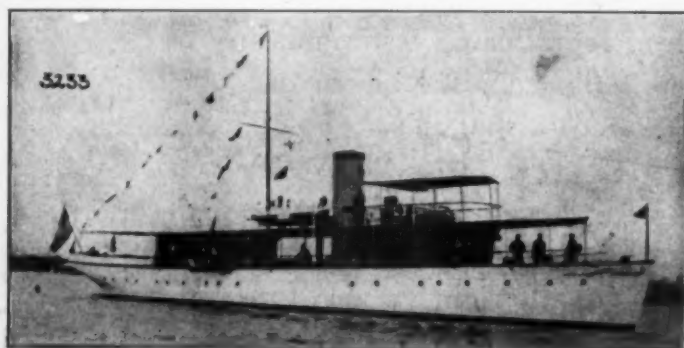
WINTER CHARTER—We specially offer several modern GASOLINE HOUSEBOATS particularly adapted for FLORIDA waters. The demand last season greatly exceeded amount of available craft; these conditions will doubtless prevail next Winter, therefore early arrangements are advised.



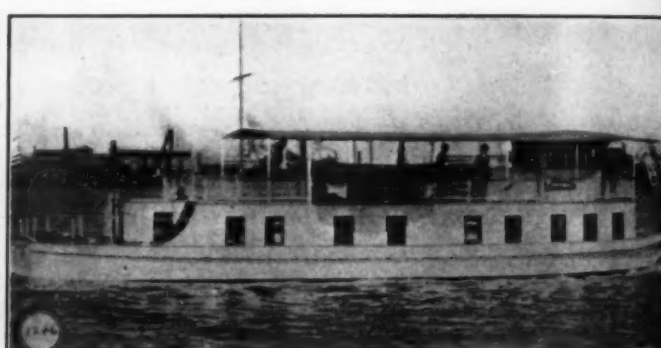
No. 1796—For Sale or Charter—Very roomy, twin screw cruising power yacht, 99 x 17 x 4 ft., adapted for Florida service. Speed 12-14 miles; Standard motors. Large dining saloon, six staterooms, three bathrooms; all conveniences. Cox & Stevens, 15 William Street, New York.



No. 1662—For Charter—Attractive 90 ft. twin screw gasoline houseboat; speed 10-12 miles. Large saloon, four staterooms, two bathrooms; all conveniences. Handsomely furnished. Cox & Stevens, 15 William Street, New York.



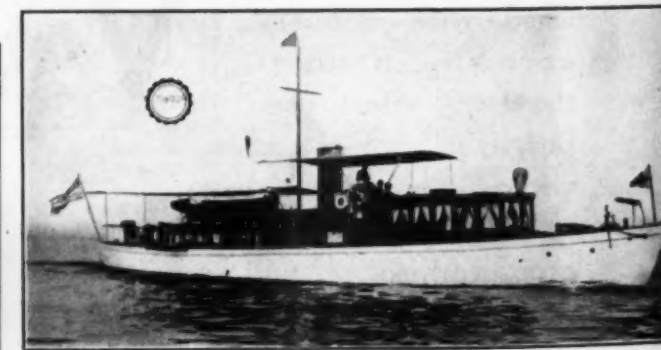
No. 3233—For Sale or Charter—Particularly desirable 123 ft. steel steam yacht. Speed up to 17 miles. Recent build. Dining saloon and social hall on deck; five staterooms, two bathrooms, etc. Cox & Stevens, 15 William Street, New York.



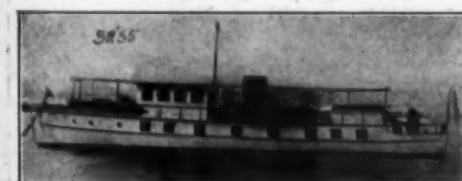
No. 1246—For Sale or Charter—Shoal draft, twin screw gasoline houseboat; 70 x 18.6 x 1.6 ft. Speed 10 miles. Dining and main saloons, three double staterooms, bath, two toilets, etc. All conveniences. Cox & Stevens, 15 William St., New York.



No. 2247—For Sale or Charter—(Now has deckhouse) 90 ft. flush deck, twin screw gasoline cruiser. Speed 13-14 miles. Dining saloon on deck; main saloon, three staterooms, two bathrooms, etc. Particularly able craft. Cox & Stevens, 15 William Street, New York.



No. 3092—For Sale or Charter—Lawley built, twin screw power yacht; 75 x 13 x 3.10 ft. Speed up to 14 miles; two 6 cyl. Sterling motors. Dining and main saloons, double stateroom, large galley, etc. First class condition. Adapted for Florida service. Cox & Stevens, 15 William St., New York.



No. 3235—For Charter—Up-to-date twin screw gasoline houseboat; 80 x 16.7 x 2.10 ft. Recent build. Speed 10 miles. Deck saloon, main cabin, three double staterooms, etc. Cox & Stevens, 15 William Street, New York.



No. 521—For Sale—Raised deck cruiser; 57 x 13 x 3.4 ft. Speed 11 miles; 50/60 H.P. Twentieth Century motor. Large saloon, one double and two single staterooms, bath and toilet room. Price low. Cox & Stevens, 15 William Street, New York.



No. 3461—For Sale—Twin screw express cruiser; 65 x 9 x 3.3 ft. Speed 25 miles; two 6 cyl. Van Blerck motors (new 1917). Stateroom and saloon accommodation four in owner's party. Best construction. Cox & Stevens, 15 William Street, New York.

STANLEY M. SEAMAN

YACHT BROKER

220 BROADWAY, N. Y.

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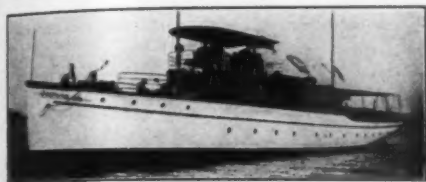
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TELEPHONE 3479 CORTLANDT

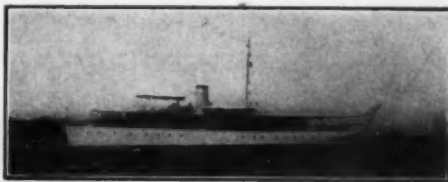
BRITISH CORRESPONDENT

MARINE INSURANCE

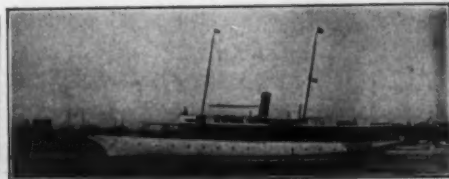
We have for Sale and Charter a large list of desirable yachts of every description. We advise early selection for Florida season, as the demand last year exceeded the supply and similar conditions look to prevail next Winter. Below are offered some excellent Gasolene Houseboats at attractive prices. Send for Handsome Illustrated Yacht List—mailed free.



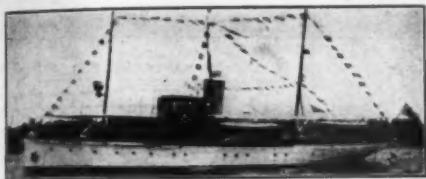
7482—The only large steel triple screw Gasolene Cruiser available for Sale. Make excellent Patrol boat. Immediate delivery. Low price. Stanley M. Seaman, 220 Broadway, New York.



8513—For Sale or Charter—Very desirable 123 ft. steel steam yacht. Practically new. 5 staterooms. 2 baths. All conveniences. Speed up to 17 miles. Stanley M. Seaman, 220 Broadway, New York.



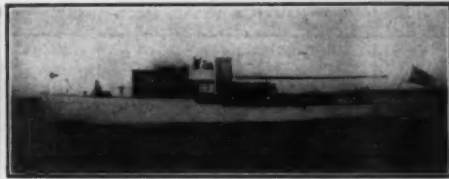
5233—Estate desires immediate sale of this fine 115-ft. steam yacht, offering 4 staterooms, 2 baths. Very economically maintained. Bargain to quick buyer. Stanley M. Seaman, 220 Broadway, New York.



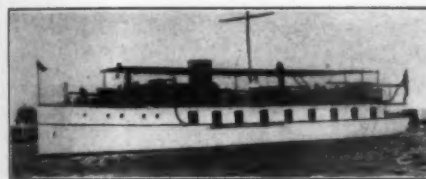
7920—Unusually able 95 ft. Gasolene Cruiser. All conveniences—hot water heat. Excellent Patrol boat. In commission. Immediate delivery. Stanley M. Seaman, 220 Broadway, New York.



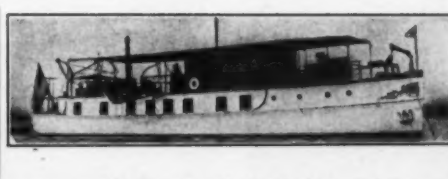
8411—90 ft. Twin Screw Coast Cruiser. New 1916. 3 staterooms and bath. Speed 14 miles. Stanley M. Seaman, 220 Broadway, New York.



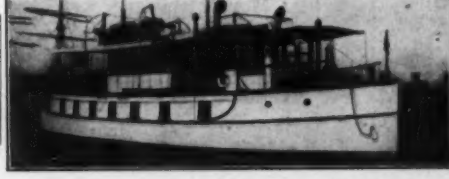
7515—80 ft. Lawley Coast Cruiser. Speed 13 miles. Perfect condition. In commission. Bargain. Stanley M. Seaman, 220 Broadway, New York.



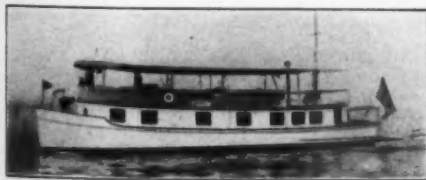
8727—For Charter—90 ft. Twin Screw ideal shoal draft cruiser. 4 elegant staterooms; bath; all modern conveniences—hot water heat. Speed 12 miles. In commission, immediate delivery. Stanley M. Seaman, 220 Broadway, New York.



8401—For Sale—75 ft. Mathis Cruiser, good as new. 4 staterooms; two Standard motors; speed 10 knots. All conveniences. Ideal for Florida. Stanley M. Seaman, 220 Broadway, New York.



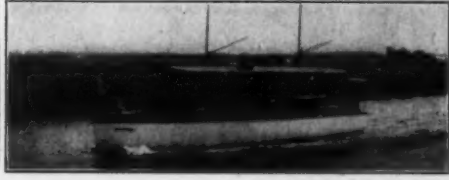
8613—For Sale or Charter—68 ft. Twin Screw Coast Cruiser; 20 ft. beam, 2.10 ft. draft—cruise anywhere in Florida. 2 double staterooms; shower bath; hot water heat. Standard motors; speed 9 knots. The finest craft of type offered. Stanley M. Seaman, 220 Broadway, New York.



8633—For Sale—60 ft. Florida Cruiser; 17 ft. beam. 3 staterooms; bath. Stanley M. Seaman, 220 Broadway, New York.



8362—For Sale or Charter—62 ft. Cruiser. 2 double staterooms; bath. Now in Florida. Stanley M. Seaman, 220 Broadway, New York.



8624—Excellent opportunity to purchase at a big bargain this 56 ft. Coast Cruiser. Exceptionally heavily built; speed 12 knots. Offers solicited. Stanley M. Seaman, 220 Broadway, New York.



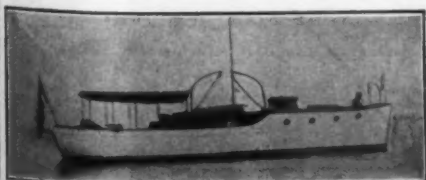
8706—55 ft. Express Patrol cruiser. New 300 h.p. Duesenberg, July, 1917. Speed 24 miles. Only boat of type for sale. Stanley M. Seaman, 220 Broadway, New York.



8707—High grade 46 ft. Bridge Deck Cruiser. New 1916. Same arrangement as 45 ft. Elco-de-Luxe. 85 Sterling. Speed 12 miles. Stanley M. Seaman, 220 Broadway, New York.



7844—For Sale—The finest 51 ft. Cruiser available. Good as new. Now on the Lakes. Stanley M. Seaman, 220 Broadway, New York.



8603—Very able 42 foot cruiser. Practically new. 2 staterooms. Bargain. Stanley M. Seaman, 220 Broadway, New York.



8614—35 ft. Bridge Deck Cruiser launched 1916; very able seaboat. Good accommodations. Stanley M. Seaman, 220 Broadway, New York.



8510—New 30 ft. Seagoing Cruiser. 9 ft. beam. 15 h.p. Sterling engine. Fine accommodations. Unusually complete. In commission. Stanley M. Seaman, 220 Broadway, New York.

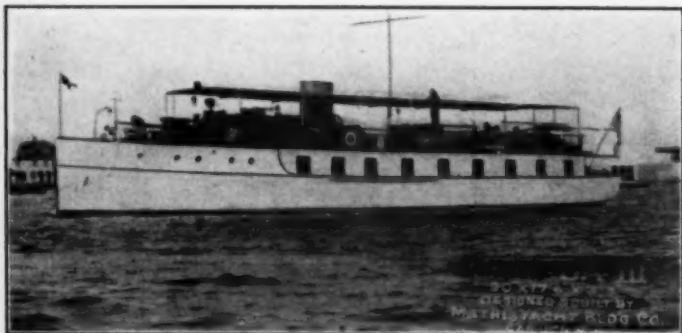
TAMS, LEMOINE & CRANE

NAVAL ARCHITECTS AND YACHT BROKERS

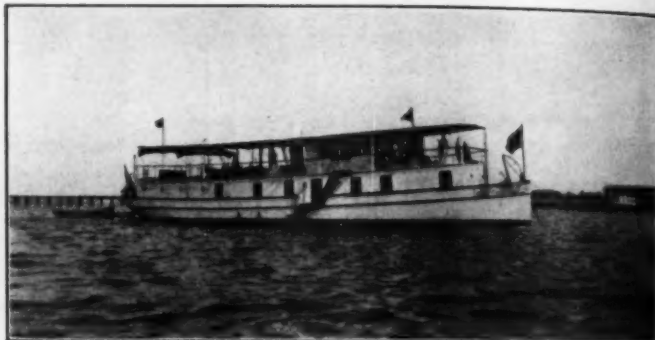
Telephone
4510 John

52 Pine Street
New York City

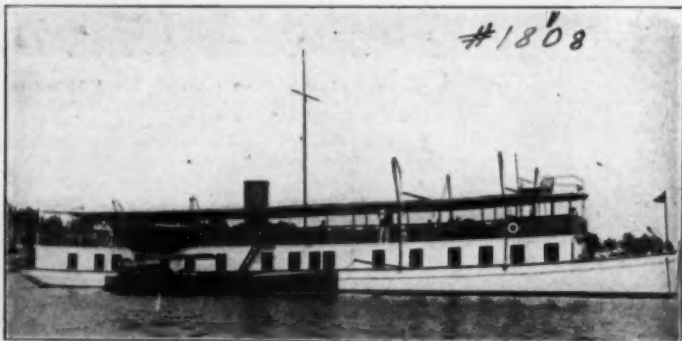
Offer for charter the following desirable houseboats all of which are admirably suited for Florida waters



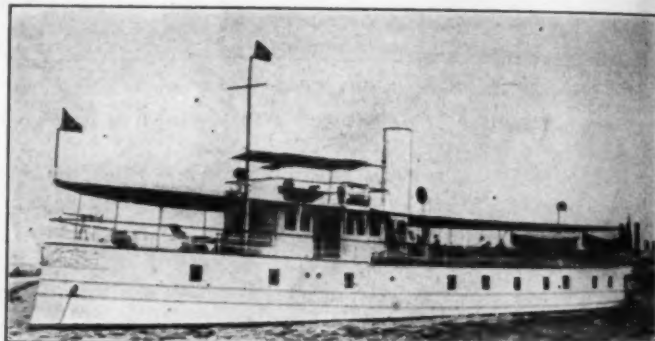
No. 1865—Exceptional opportunity to charter one of the best houseboats available. 90 ft. over all, 17 ft. 6 in. beam and 3 ft. 6 in. draft. 3 staterooms, maid's room, 2 bathrooms and dining saloon.



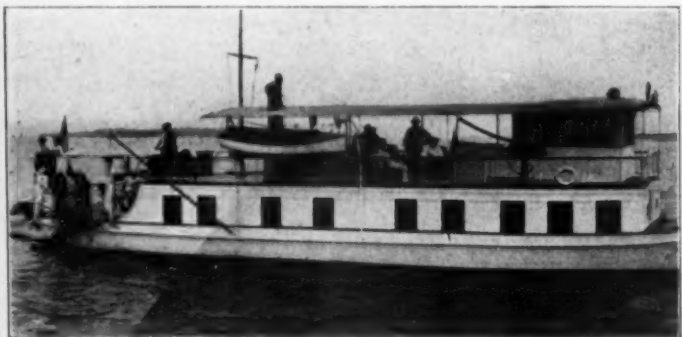
No. 1820—Charter—Desirable houseboat in southern waters, 103 ft. x 20 ft. 4 in. x 3 ft. draft. 4 staterooms, 2 bathrooms, dining saloon and large sitting room.



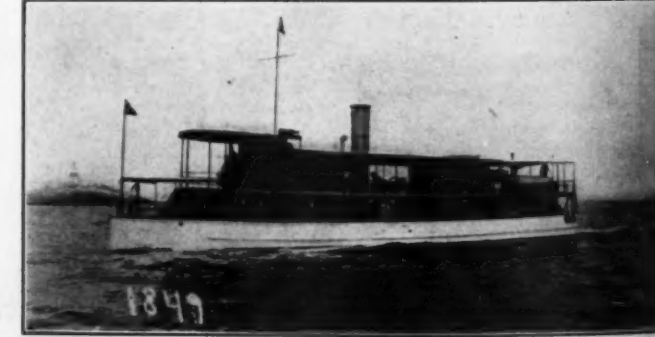
No. 1808—Sale—Charter—Now at Miami. Admirably suited for Florida waters. 125 ft. x 17 ft. 8 in. x 3 ft. 4 in. draft. 4 staterooms, 2 bathrooms, very large dining saloon, ice machine, etc.



No. 243—Sale—Charter—Twin screw steam houseboat, 116 ft. x 21 ft. x 4 ft. draft. 4 staterooms, 3 bathrooms, dining saloon and smoking room.



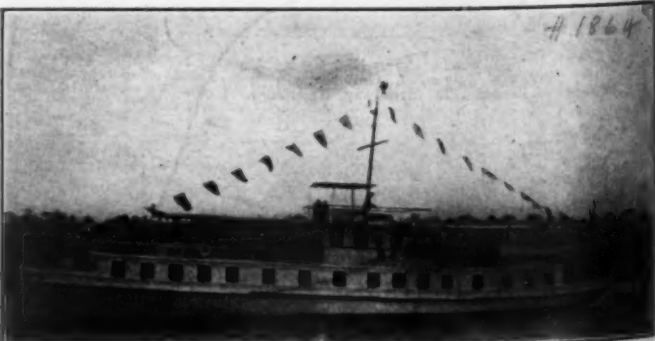
No. 1860—Charter—Shallow draft twin screw houseboat, 70 ft. x 18 ft. 6 in. x 18 in. draft. 3 staterooms, bathroom, dining saloon and pilot house.



No. 1849—Charter—Desirable houseboat, 115 ft. x 17 ft. x 3 ft. 6 in. draft. Speed 12 miles. 5 staterooms, 3 bathrooms, main saloon, dining saloon, smoking and sitting rooms.



No. 1847—For Charter—Houseboat now in Florida waters, 85 ft. x 18 ft. x 28 in. draft. 4 staterooms, bathroom, large dining saloon, sitting room, etc.



No. 1864—Charter—Now in Florida waters. Modern houseboat, 110 ft. x 20 ft. x 4 ft. 9 in. draft. 4 Staterooms, dining saloon, sitting room, etc.

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ENGINEERS
BROKERS
MARINE INSURANCE

GIELOW & ORR

52 BROADWAY, NEW YORK

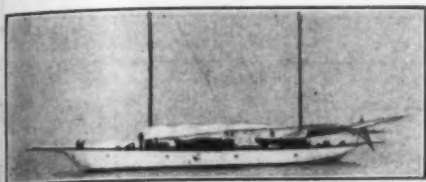
Telephone: 4673 Broad
Cable Address:
Crogie, New York
A.B.C. Code

ALSO: CHICAGO STEAMBOAT EXCHANGE, 350 NORTH CLARK STREET, CHICAGO

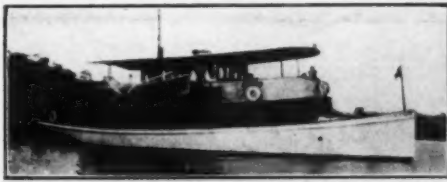
We have a most complete and up-to-date list of steam yachts, power yachts of all sizes, sail, auxiliary and houseboats on file in our office, kept constantly up-to-date by a thorough and comprehensive canvass of the entire yachting field from time to time. We are in a position to submit full information on any type of boat upon request.

FOR SOUTHERN CRUISING this Winter we offer a number of very desirable POWER HOUSE BOATS and POWER YACHTS which are specially adapted for FLORIDA waters. Last season a great number of clients were much disappointed in not being able to secure for charter a suitable POWER HOUSE BOAT or POWER YACHT owing to the great demand. Yachting this coming WINTER SEASON promises more activity than ever before—so—CHARTER A BOAT NOW AND BE ASSURED OF ONE THIS WINTER.

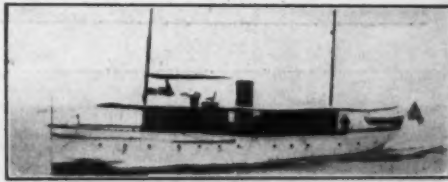
We can render invaluable assistance in expert appraisals, supervision of alterations and estimates.



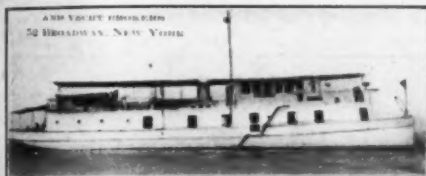
No. 3303—Sale—97 foot centerboard auxiliary ketch, four staterooms, two bathrooms, very roomy, well taken care of. Gielow & Orr, 52 Broadway, New York.



No. 3083—Charter—60 foot cruising houseboat, available for charter, good seaboat, good accommodations. Gielow & Orr, 52 Broadway, New York.



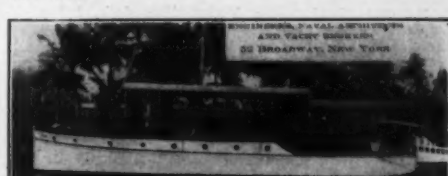
No. 3626—Sale—Charter—Attractive 98 foot twin screw steel motor yacht, Standard motors, excellent accommodations, handsomely furnished. Gielow & Orr, 52 Broadway, New York.



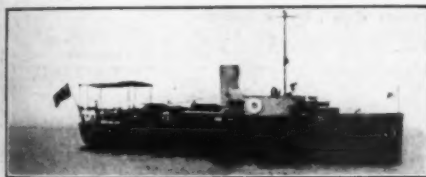
No. 1055—Charter—Now in Florida, 106 foot twin screw power houseboat, four double staterooms, two bathrooms, deckhouse. Gielow & Orr, 52 Broadway, New York.



No. 5964—Sale—1917—60 foot twin screw motor yacht, Sterling engines, speed 20 to 24 miles, very attractive craft. Gielow & Orr, 52 Broadway, New York.



No. 5443—Sale—Finest little 53 foot twin screw, raised deck cruiser, available for southern cruising. Sterling motors. Gielow & Orr, 52 Broadway, New York.



No. 5518—For Sale—Great Bargain. Strongly built and very desirable cruiser, 50 ft. 4 inches over all. Will be in commission until middle of October, for demonstration in New York. Gielow & Orr, 52 Broadway, New York City.



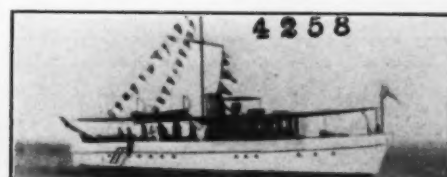
No. 4747—Charter—Popular 68 foot twin screw houseboat, now in Florida waters, Standard motors, fine accommodations. Gielow & Orr, 52 Broadway, New York.



No. 5532—Sale—Charter—62 foot power houseboat, two staterooms, deckhouse, bathroom, practically new. Gielow & Orr, 52 Broadway, New York.



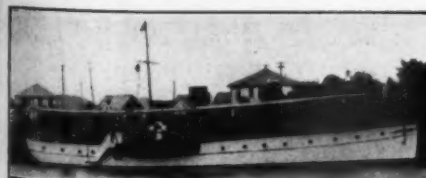
No. 1414—Sale—126 foot steel steam yacht, excellent seaboat, very good accommodations, boat in fine shape, owner anxious to sell. Gielow & Orr, 52 Broadway, New York.



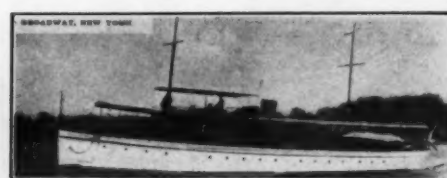
No. 4258—Sale—Attractive 91 foot twin screw motor yacht, deck dining saloon, heavily built, excellent seaboat. Gielow & Orr, 52 Broadway, New York.



No. 14—Charter—114 foot twin screw steam yacht, four double staterooms, dining saloon and social hall on deck. Every modern convenience. Gielow & Orr, 52 Broadway, New York City.



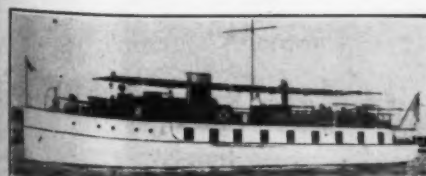
No. 4199—Sale—90 foot twin screw motor yacht, overhauled Spring 1917, new deckhouse put on, excellent accommodations below decks. Gielow & Orr, 52 Broadway, New York.



No. 3710—Sale—Charter—Popular 99 foot twin screw motor yacht, Standard motors, especially adapted for southern cruising, six staterooms, three bathrooms. Gielow & Orr, 52 Broadway, New York.



No. 5958—Sale—Lawley built 1916, 30 foot express cruiser, speed about 20 miles, Van Blerck motor. Owner anxious to sell. Gielow & Orr, 52 Broadway, New York.



No. 3617—For Charter—90 foot twin screw power houseboat, very attractive, handsomely furnished, four staterooms. Gielow & Orr, 52 Broadway, New York.



No. 3106—Sale—Charter—70 foot power yacht, excellent boat for southern cruising, Winton motor, two staterooms, bathroom. Gielow & Orr, 52 Broadway, New York.



No. 2955—Sale—Great bargain—95 foot keel schooner. Worth investigating.

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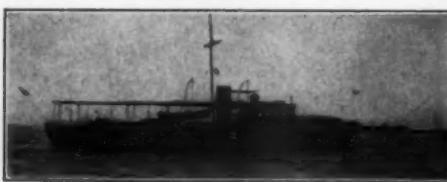
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Yachting, N. Y.

We have a complete list of Yachts of every description for sale and charter.

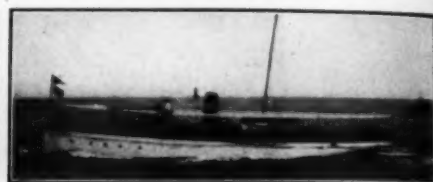
Plans, Photos and full particulars furnished on request



No. 294—Steel Steam Yacht, flush deck, 117 x 16, triple expansion engine, Roberts watertube boiler.



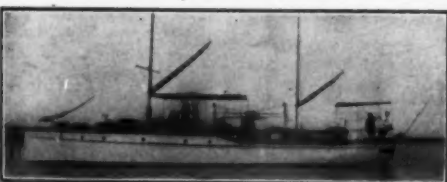
No. 1585—Power Yacht, 91 x 15.7, staunch construction, flush deck, two 6-cylinder motors, good speed.



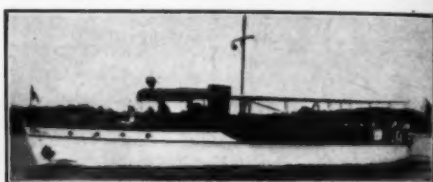
No. 2356—Motor Yacht, 85 x 13.6, formerly steam power, now fitted with 100 H.P. gasoline engine. Want offer.



No. 1738—Raised Deck Cruiser, 65 x 11, six cylinder motor, good accommodation.



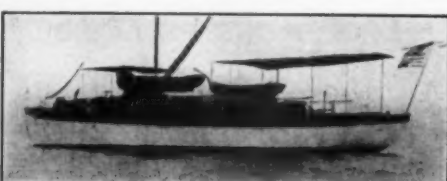
No. 1959—Exceptionally able seaboat, 64 ft., two state-rooms, bath, etc., in commission.



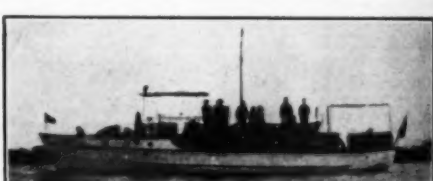
No. 1561—Power Cruiser, 60 x 11, new 6 cyl. Twentieth Century motor, bridge control.



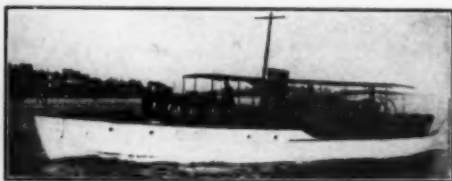
No. 1700—Bridge Deck Cruiser, 52 x 11, Standard motor, with deck controls.



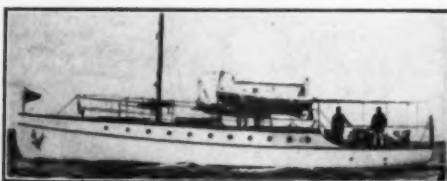
No. 1919—Attractive Power Cruiser, 60 x 12.6, fifty H.P. motor.



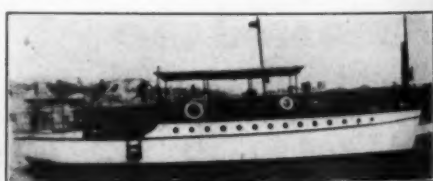
No. 1410—Excellent cruiser, 57 x 11, new 45 H.P. Sterling motor. Good deck space, etc.



No. 1960—Desirable cruiser, 65 x 12, best condition; complete outfit; 60-80 H.P. motor; price reasonable.



No. 1779—Light Draft Power Cruiser, 56 x 13.2 x 3, fifty horsepower Twentieth Century motor.



No. 1614—Raised Deck Cruiser, 57 x 13, Twentieth Century motor, large accommodation.



No. 1750—First class cruiser, 42 x 10, Lamb motor, full equipment.



No. 1370—First-class Cruiser, 55 x 11, six cylinder Standard. Speed 12 miles.



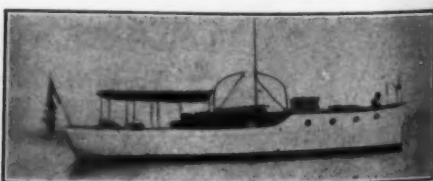
No. 2359—Patrol type cruiser, 43 x 8.6, six cylinder motor. Speed 15-18 miles. Bargain figure.



No. 20—For Sale or Charter, 85 ft., Florida Houseboat, 75 H.P. Standard motor, 5 staterooms, etc.



No. 2248—Express Cruiser, 55 x 8.9, Speedway motor, 8 cyl. 200 H.P. Speed 22 miles.



No. 2321—Roomy Cruiser, 42 x 11.6, practically new, fully equipped; 4 cylinder motor.

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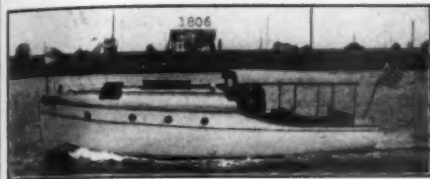
45 Broadway

New York City

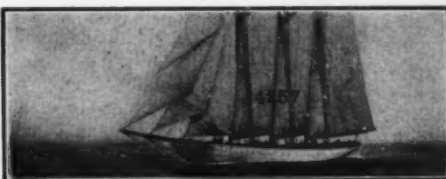
Marine Insurance

Our list comprises all the available yachts for sale and charter. Below are a few of our offerings. If none of these appeal to you, write us your requirements. Our knowledge of the yachts we offer, and our 25 years' experience in the business, insure satisfaction to any one buying or chartering a yacht through this office.

SEND FOR OUR CATALOGUE



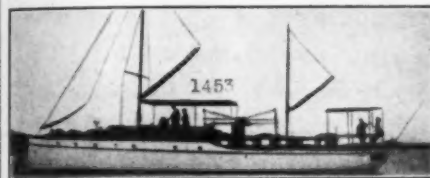
1806—30 foot cruiser. Two berths in cabin; Sterling Motor. Speed 12 miles.



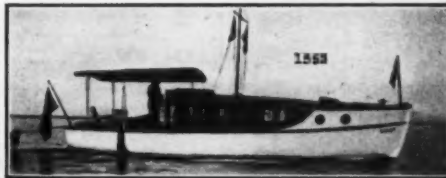
4257—200 foot steel ocean going schooner yacht. Splendid accommodations.



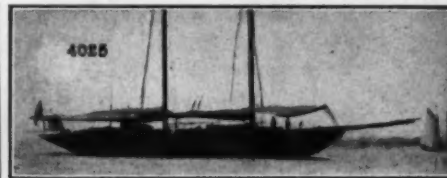
4043—100 foot auxiliary centreboard ketch. Four staterooms, large saloon, bath, etc.



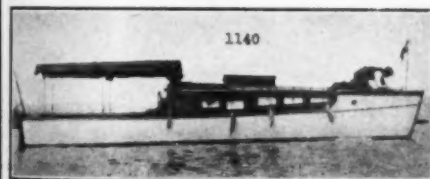
1453—65 foot power yacht. Two staterooms, Main saloon, bath, etc.



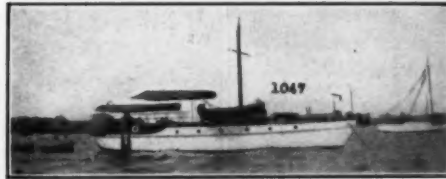
1553—32 foot cruiser. Sleeps 3. 15-20 H.P. Bridge-port motor. Speed 8 miles. Electric light. Price \$750.



4025—106 foot auxiliary schooner, 5 ft. 6 in. draft. Four staterooms, large saloon, two bathrooms, etc. Speed 9 knots under power.



1140—32 foot cruiser. Sleeps three. 25 H.P. Sterling motor. Speed 16-18 miles.



1047—Sale or Charter for Southern waters—55 foot cruiser, two staterooms, saloon, etc.



4202—47 foot auxiliary yawl. Stateroom and four berths in saloon. Speed 7 miles. Price attractive.



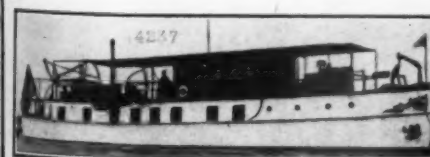
1382—43 foot cruiser. Stateroom. Two double berths in saloon, and two in engine room. Speed 10 miles.



1688—45 foot cruiser. Double stateroom. Two berths in saloon. Two toilets, etc. Speed 10 miles.



4087—Sale or Charter—Twin screw 70 foot power houseboat. Three staterooms, saloon, bath, etc. Now in Florida.



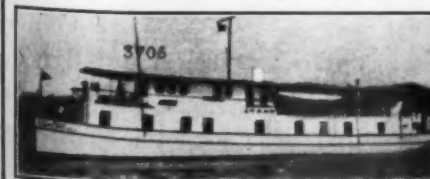
4237—Twin screw 75 foot power houseboat. Four staterooms, music room, bath, etc.



4231—Sale or Charter—85 foot power houseboat. Five staterooms, dining saloon, bath, etc.



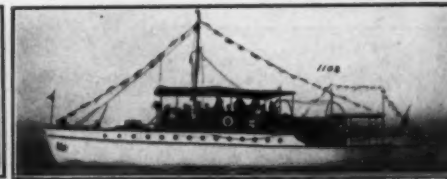
4157—Twin screw 70 foot power houseboat. Splendid accommodations. Now in Florida.



3706—Sale or Charter—Twin screw 104 foot power houseboat. Four large staterooms, dining saloon, social hall, baths, etc.



1784—62 foot houseboat. Two staterooms, saloon, bath, etc. Now in Florida.



1102—57 foot cruiser. Three staterooms, main cabin, bath, etc. Price attractive.

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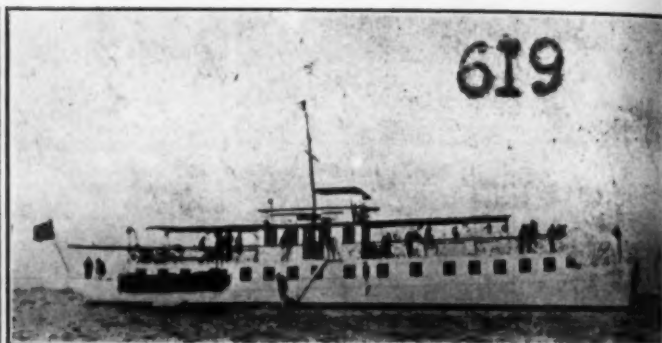
Our Central Location—Our Efficient Service—The desirable yachts offered and sold through this office characterize the House of Sanford.

A few of the yachts available are herewith submitted for your consideration, several of which are well adapted for Southern waters.

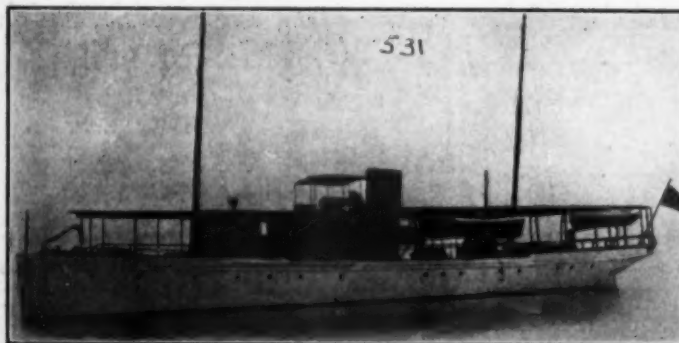
Further particulars upon request.



No. 269—Charter—May Sell—Modern Motor Houseboat, 85 ft. x 18 ft. x 30 in. draft. 4 double staterooms, 1 bathroom.



No. 619—Charter—May Sell—110 ft. Twin Screw Houseboat. Sleeping accommodations for 12 persons.



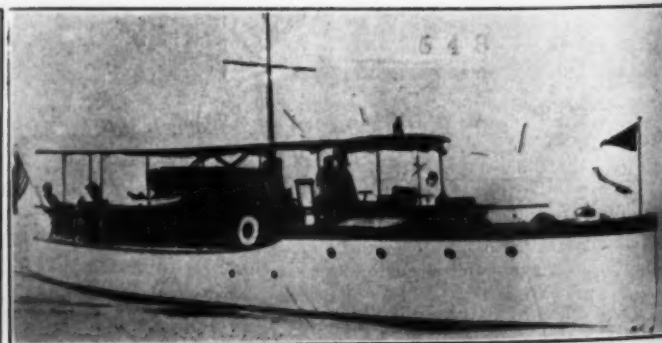
No. 531—Sale—Flush Deck Cruiser, 96 ft. x 18 ft. x 6 ft. Sleeping accommodations for 9 persons.



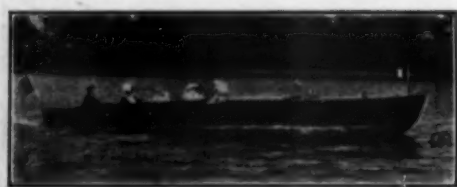
No. 666—Sale—60 ft. Cruiser. Very good seaboat. Excellent condition.



No. 692—Sale—Twin Screw Cruiser, 53 ft. x 12 ft. x 3 ft. draft. Excellent condition. Good boat for Southern and Northern waters.



No. 648—Sale—50 ft. Cruiser. Excellent condition.



No. 464—36 ft. Elco Runabout. Exceptionally good condition. Speed 25 miles.



No. 355—21 ft. Runabout. Good condition. Price attractive. Speed 15 miles.



No. 590—24 ft. Runabout. Speed 22 miles. Very good condition.

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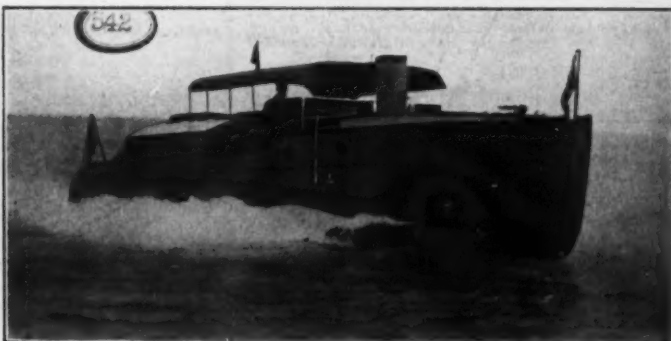
Tel. Harrison 1344

80 E. JACKSON BOULEVARD, CHICAGO, ILL.

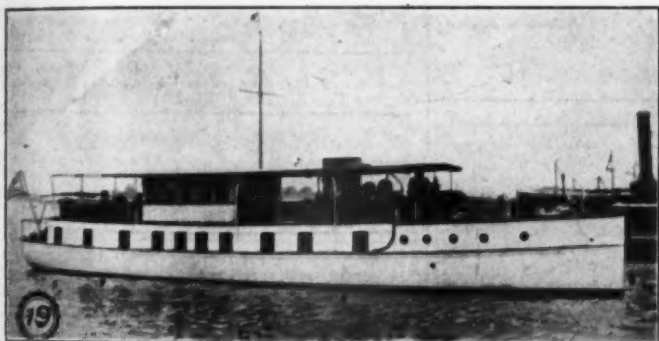
WE OFFER FOR SALE AND CHARTER the most desirable boats of all types on the Great Lakes and Coasts. Plans, photographs and full particulars furnished upon request.



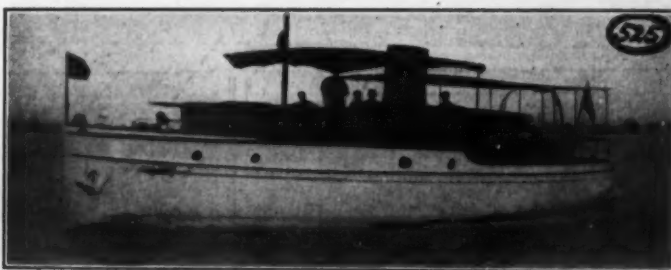
No. 566—For Sale—55 ft. twin screw motor yacht. Double stateroom. Large main saloon. Two motors.



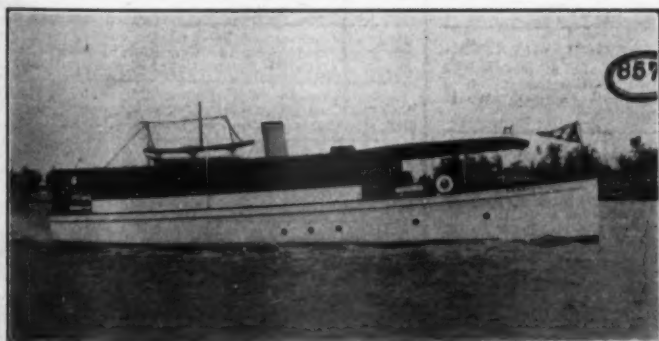
No. 542—For Sale—40 ft. fast express cruiser. 8 cyl. Van Blerck motor. Speed 17-20 miles. Built in 1916.



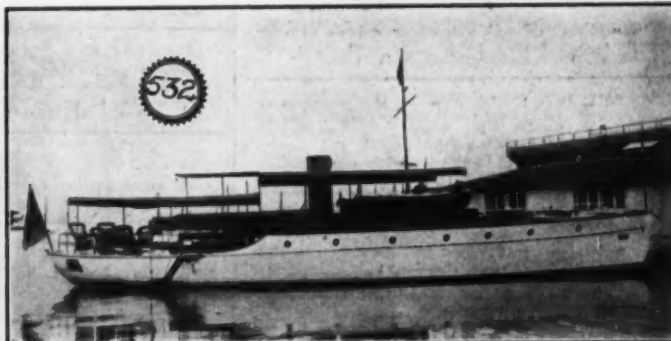
No. 19—For Charter—Desirable 95-ft. power houseboat. Social hall on deck. Four double staterooms. Modern appointments.



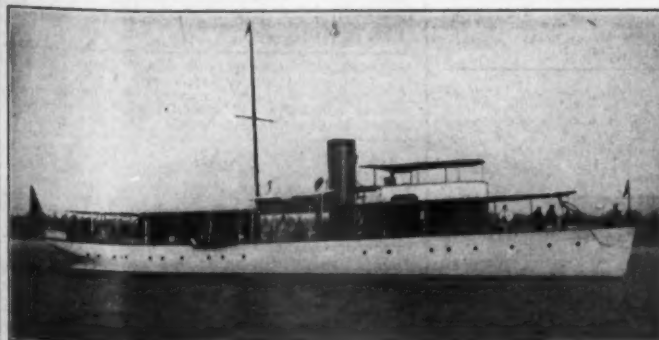
No. 525—For Sale—60 ft. x 15 ft. power boat. Two Sterling motors. Speed 11 miles. Large accommodations. Located on Lakes. Price attractive.



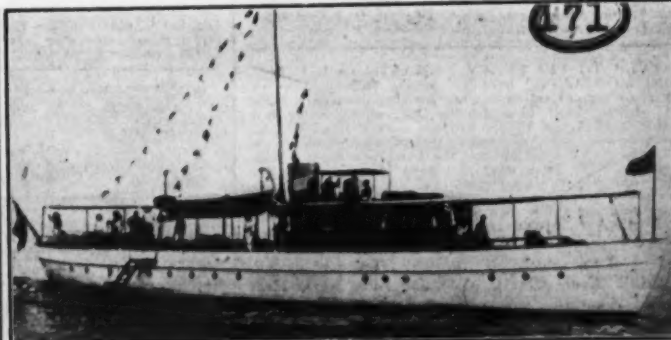
No. 857—For Sale—65 ft. x 12 ft. x 3 ft. 6 in. Power Boat. Speed 12 miles. Built in 1917. Six cyl. Sterling motor. Complete equipment. Excellent boat for Florida service. Two staterooms, large saloon. Price attractive.



No. 532—For Sale—Twin screw power boat, 71 ft. x 12 ft. 6 in. x 3 ft. draft. Speed 12 miles. Speedway motors. Handsomely furnished.



No. 606—For Sale—Modern 122 ft. steel steam yacht. Splendid accommodations. Two deckhouses. Five staterooms.



No. 171—For Sale—Modern 91 ft. cruising power yacht. Accommodations well arranged. Four staterooms, bath, large saloon. Price attractive.

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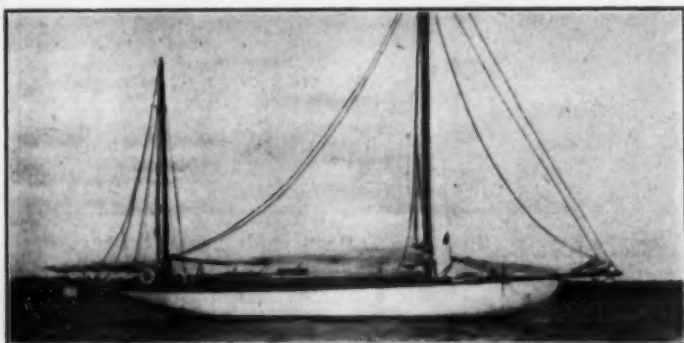
No. 6904—Sale or Charter—Most desirable power house-boat for Florida waters. Exceptionally commodious and comfortable accommodations, light draft and Standard engine.
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No. 4831—For Sale—Power cruiser especially designed and built for Florida waters. 83 ft. x 13 1/2 ft. x 3 ft. Roomy and airy living quarters.
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No. 5191—For Sale—40 ft. express cruiser. Sterling engine. High speed. Offered at a low price.
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 YACHTS OF ALL TYPES FOR SALE AND CHARTER



No. 2645—For Sale—Particularly fine auxiliary centreboard cruisin' yawl, 55 feet overall, 38 feet waterline, 15 feet beam, 2 feet 8 inches draft. Large main cabin, owner's stateroom, toilet, galley and forecabin. Thoroughly overhauled by present owner. In commission on Chesapeake Bay. Ready to start for Southern cruise for which it is well adapted. Special bargain for prompt purchase. Plans and further particulars from Gielow & Orr, 52 Broadway, New York.



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A few medium and high speed four and six cylinder, four cycle motors, new or rebuilt. Reliance Motor Boat Co., 207th St., Harlem River West, N. Y. City.

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FOR SALE—"Iris II." Fastest Canadian Hydroplane, three step design, 26 x 6 ft. Mahogany throughout, seating capacity eight, 200 H.P. 8-cylinder Sterling Racing motor. Completely equipped, launched and tested out late last fall and conceded by experts the most perfect planning hydroplane afloat. Photos, price and full particulars upon application. Thos. Enright, 260 Brunswick Ave., Toronto, Canada.

POWER TO FIT EVERY DEMAND—4-cyl. PITTSBURGH MODEL 74" bore 10" stroke four-cycle heavy duty governor controlled engine, good as new, only \$485. Cost \$1500. Will turn 3-blade 36" wheel. Develops 60 H.P. at 400 rev. Have on sale a very large line of single, double, four, six and eight-cyl. engine values in all the most desirable sizes of the best high grade standard makes. We have what you need at the right price. State your power requirements and let us quote before you buy. Magneto, carburetors and parts of every nature and very low prices. Badger Motor Company, 215 North Ave., Milwaukee, Wis.

<p>Trimount Whistle Blower Outfits Blower runs by friction contact with engine fly-wheel. Whistle of brass, nickel-plated. Made in 3 sizes. TRIMOUNT ROTARY POWER CO. 20 Heath Street (Factory: Whiting Ave., East Dedham, Mass.)</p>	<p>Trimount Rotary Hand Bilge Pumps All bronze composition. Suction lift 6 to 26 feet. A lifelong convenience. Made in 3 sizes. TRIMOUNT ROTARY POWER CO. Boston, Mass. (Factory: Whiting Ave., East Dedham, Mass.)</p>
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FOR SALE—In Miami, Florida, Yacht Tik-Tok, 31 x 8 x 3. Ten H.P. Hartford 2-cylinder motor. Toilet, electric lights, ice box, stove, wash bowl connected with 22 gal. supply tank, 10 ft. tender, 4 spring bunks in cabin. Full equipment and in fine condition. She will take you out and bring you back. C. C. Stager, 581 Blue Hills Ave., Hartford, Conn.; or Loe & Cooper, Miami, Fla.

BUSINESS FOR SALE—THERMEX SILENCER
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FOR SALE—The well-known Apache II Motor Boat, 40 ft. long, 10 ft. beam, 3 ft. 6 in. draft, trunk cabin, 13 ft. aft deck, Lamb 30 H.P. engine, new last year. Speed 12 miles and better; room for six to sleep, Pullman berths and 6 ft. 3 in. head room in cabin all parts. Boat has been thoroughly overhauled last spring, and is in the best of condition, and all copper fastenings and fully equipped. Can be seen at the Beech Hurst Yacht Club, White Stone Landing, Long Island, by arranging with owner Nicholas T. Brown, 360 West 116th St. Telephone Plaza 6797.

FOR SALE—V-bottom, shoal draft Day Cruiser. 32 ft. x 8 ft. Speed 20 miles. 6 cyl. 60-70 H.P. Lowe Victor engine. Boat is fully equipped. Built in Fall 1915. Used scarcely at all. Has electric lights, binnacle, search light, speed and revolution indicators. Was put in commission this Summer but not used. The boat is practically new and is an ideal craft for Florida waters. The owner, desiring to part with his speed boat, will consider a trade for a cabin cruiser or a cruising house boat. John A. Lucey, 28 North 11th St., Philadelphia, Pa.

WANTED—Small auxiliary yacht, schooner, ketch or yawl rig. 45 to 65 ft. over all. In good condition and fully found. Please send photo, if possible plan, name designer, where and when built, beam, draft and gross tonnage, maker of motor, power and driving speed. Quote lowest cash price. A. J. Pierce, 1841 Wabash Ave., Chicago, Ill.

Florida bound: opportunity for party to cruise south on modern boat by sharing expenses. Boats wanting to join fleet send in names. "Experienced," MoToR Boating.

Florida pilot—Experienced, reliable. References. Boats delivered. Fee reasonable. Would like boat for the winter. (Wife can go as cook.) "Competent," MoToR Boating.

FOR SALE—First class four-cycle, four-cylinder engine, 5 1/2 x 5 1/2. Suitable for runabout. Aluminum base. Everything complete. Now in operation. C. Grecht, 1330 S. Sharp Street, Baltimore, Md.



FOR SALE—High speed 30 ft. motor boat RAT; winner of both Herald Trophy and Staple Cup at Thousand Island this season. Displacement type. Average speed 32 miles. Solid mahogany construction. Powered with 135 H.P. 6 cyl. Sterling motor. Self starter, lighting outfit, etc. Attractive figure accepted; owner building new boat and will deliver in perfect condition. Cox & Stevens, 15 William Street, New York.

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CANADIANS, Second-hand engine bargains. Send for list. GUARANTEE MOTOR COMPANY. 73 Bay Street, North Hamilton, Ont., Canada

MOTOR BOAT FOR SALE—26 feet; Cabin Seating 20; Monarch Gasoline Engine, etc. Acme Cement Corporation, Catskill, N. Y.

FOR SALE—One Barber, 2-cylinder Motor, 5 1/4" bore, 5 1/4" stroke, with reversible propeller. \$135.00. Must be sold to settle estate. W. J. Osborne, 237 Dock St., Schenectady, N. Y.

R/D Cruiser, third season, 26 x 9, Palmer 12 h.p., Galley, Toilet, sleep four, Electric lights, Water tank, complete cruising equipment \$500. 670 E. 149 St., Bronx.

Will trade first class Industrial Stocks or Bonds for 60 to 100 foot Yacht, either Power or Auxiliary. Address Box No. 10, MoToR Boating.

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SPEEDY RUNABOUT
 Handsome 28 ft. mahogany Runabout, fully equipped, a real 23 miler all ready for southern waters, used this season. Address H. J. Smith, care of MoToR Boating, 119 W. 40th St., New York.

BARGAINS—26 ft. 7 in., Open Launch little used, \$250.00. 35 ft. 7 in., Glass Cabin Launch, in use, \$200.00, recently overhauled. One Wisconsin Outboard Motor, little used, runs O.K., \$40.00. E. W. Bennett, Southampton, N. Y.

FOR SALE—30 ft. x 6 ft. V-bottom, built 1916, 40 h.p. 4 cycle motor. Full electric starting and lighting system, auto control. Full details on application. Price \$600.00. E. J. Stone, Knox Motors Associates, Springfield, Mass.

FOR SALE—22 Rubber Covered Berling Dual Switches. 5 Aluminum Berling Dual Switches. 23 Nickel Plated Berling Dual Switches. 40 V. N. 1 Dual Cols. All at above new stock. Will sell all, or part of lot. Van Hirsch Motor Co., Monroe, Mich.

FOR SALE—One single cylinder extra heavy duty 6 x 7 4 cycle Craig engine, complete with reverse gear in first class condition. Exceptional engine where smooth running reliability and economy are to be considered. Luders Marine Construction Co., Stamford, Conn.

WANTED FOR FLORIDA WATERS a light draft comfortable family Runabout, 25 to 28 ft. long. If your boat is practically new, and you want to sell it for good money, address P. O. Box No. 373, Fairbault, Minnesota, giving age, price, photograph, and full description of Hull, Motor, Electric Starter, and Equipment.

HAVE a 45 ft., 3 step hydroplane, mahogany construction, 2 six-cylinder engines, 125 H.P. each. The boat has won two gold cups and is in perfect condition. Cost \$12,000 to build. Will sell this boat cheap or will trade the boat and an 18 acre farm with good buildings for a steam cruiser. Address F. Casey, 204 W. Jefferson St., Syracuse, N. Y.

FOR SALE—Raised Deck Cruiser, 30 ft. x 8 ft. 6 in. x 2 ft. 6 in. 4 cycle motor, in first class condition. Delivery in Florida waters. F. Forster, Orchid, Fla.

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The Corinthian Yacht Club

(Continued from page 15)

lawns and trees, outhouses for the storage of boat equipment and boats, and a large enclosed basin with accommodations for the club fleet, dining, billiard, and meeting rooms, appropriately furnished and decorated, sleeping rooms that are now occupied by the tired patrol yachtsmen, after a time on duty, boats under cover and several of the S. P. fleet at anchor or in the basin ready for their call down bay.

Commodore J. G. N. Whitaker, of the Yachtsmen's Club, Philadelphia, Pa., is one of the prominent Corinthian Yacht Club members. It will be remembered the many victories of Commodore Whitaker's cruiser Ilya. She raced in this and the New York section for several years, making one record after another and also made the race to Bermuda and Havana.

The following is a copy of the roll of honor, a list headed Pro Patria and includes some of the most prominent yachtsmen of the Philadelphia section. Commodore Charles Longstreth, Dr. A. Hare, Geo. Breed, C. Howell, E. R. Cassidy, C. McMillen, W. F. Harrison, E. T. Scott, Dr. R. H. Harte, G. F. Tyler, Fleet Chaplain Dr. E. M. Jeffreys, H. Wetherill, A. J. Drexel Paul, John Price Wetherill, Captain B. G. Bryan, Lieutenant Commander H. C. Mustin, J. H. R. Cromwell, Robert E. Glendinning, Commander J. W. Oman, Lieutenant Colonel C. L. Radford, Thomas C. Stockhausen, N. Hathaway, Wm. Morse, Dr. C. Biddle, Henry Austin, John R. Fell, H. S. Kerner, Dr. J. Norman Henry, Q. A. Gilmore.

All of these men are in active service, some of them in the fleet of the Corinthian Yacht Club, others on the medical staff, while some are stationed on government war craft.

The Corinthian Yacht Club was the first club to take up the formation of the United States Power Squadrons in this location and Commodore Charles Longstreth was elected one of the examiners for this district. He gave service on the examining board for a long time and had before him many of the candidates of the Delaware River Power Squadron. He has been considered the hardest man to be examined by, as he is most exacting and insists upon accuracy in all the branches of the work. He has published several books for the boy scouts and has his ship fitted for every need in the art of navigation.

Probably, there could be found no better body of yachtsmen, in this country, who have had the special training that these men of the Corinthian Yacht Club have had while under the instruction of Commodore Longstreth. They are now working for the government in the capacity of skilled yachtsmen and ought to be a great help to their country.

Imova and Sarah Jane

(Continued from page 29)

typifies that propensity, having been designed and built by Geo. Lawley & Son Corp., of Neponset, Mass., for H. B. Endicott.

Imova is 55 feet long, and has a beam of 11 feet 5 inches with a draft of 3 feet. Her speed is 23 m.p.h., which is due to her power installation, two Model FM, six-cylinder Sterling motors.

SARAH JANE, shown at the lower left hand corner of page 29, is 50 feet long by a beam of 10 feet, and is equipped with an eight-cylinder Model F Sterling motor. She is owned by W. C. Handlin, of Atlantic City, N. J.

Prize Contest ver-Look Nothing

(Continued from page 25)

piston at top dead center by using mark on the periphery of the flywheel. If no mark on the flywheel, remove the cap over the combustion chamber, and by using a steel gauge you can determine the dead center by rocking the flywheel back and forward until the mean of the movement of the flywheel is found, while the piston remains stationary at top center.

At the completion of this operation the valve push-rod set screw for the intake valve should be brought to a point where it just presses against the intake valve-stem, and locked by lock nut. Repeat the same operation with the same work with No. 2 cylinder, and so on throughout the entire engine. If this rule is followed closely you will not have valve trouble.

F. C. R., Newport, R. I.

Yard and Shop

(Continued from page 35)

important installations of this kind has just been made by E. C. Holden, of Buffalo sales agent at Para, Brazil, who has just succeeded in installing a 20-22 h.p. heavy-duty Buffalo engine in Minas owned by Lima & Ries of Para. This boat is 103 feet in overall length with a beam of 19 feet and carries her full load of eighty head of cattle, drawing 6 1/2 feet of water. In spite of this the little Buffalo engine drives her at a rate of better than 2 1/2 miles against the tide and 5 miles with the tide. This is considered by the owners a remarkable performance.

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Racing for the Gold Cup

(Continued from page 9)

accident coming when it did, did more to demoralize the racing spirit of the owners and drivers than one can imagine. It put this one boat out of the running for good and made all of the drivers timid of the turn and put them in fear of the whole course.

To clear the course of floating and submarine obstructions was a mighty task. Every conceivable kind of a floating craft which could be requisitioned in Minneapolis was put into service with pike poles, pitch forks, seines and tennis nets and an attempt was made to clean the river. The fleet which was put into service consisted of two small open motor boats and one rowboat. A couple of days later a wagon load of rowboats was imported from one of the nearby lakes and St. Paul sent up several motor boats. These latter were much delayed in arriving as the lock tender refused to open the locks at the dam as he was under instructions not to allow any boat to pass through while the races were in progress. This he interpreted as meaning from Aug. 23rd to 27th. It took an order from Washington to get the boats through. After much fishing for logs, seining, etc., the river was after a fashion cleared up. Most of the drift was towed to the shore but the next day the wind shifted, the water rose and most of the debris moved out onto the course again which necessitated that the work be done all over again. Even then an occasional dead-head appeared and at the finish of the three-day races the bottoms of the boats were full of deep gouges from the contacts with the drift.

Minneapolis having been on navigable water only for a few weeks, naturally there was a great scarcity of motor boats, in fact, there were even no rowboats or small launches on the river. Just one motor boat hailing from Minneapolis was all there was—this was Arbutus, a glass-cabin cruiser, owned by Dr. Schefcik, apparently the only motor boatman in the city of several hundred thousand people. But unfortunately Arbutus was broken down and of no assistance to the race committee.

With no boats nor any yacht club in a community it is not common to find many motor boatmen, especially men familiar with handling the thousands of details connected with hydroplane-racing and that is just what happened at Minneapolis. Not a solitary man had any experience whatsoever with racing events and there were mighty few who had ever been aboard of even a rowboat. Our readers can imagine the chaotic state of affairs which existed. So it was.

It was assumed that assistance would be forthcoming from the Mississippi Valley Power Boat Association, as that organization long ago established an enviable record for racing on the Mississippi River. This was the first time that a Gold Cup Race had been held in the west and the A. P. B. A. officials who journeyed out the 1,500 miles from the coast had an idea at least that they would receive the hospitable greetings from the westerners of which so much has been written. Most of those who went west, also had a hope, perhaps more or less slight, that the occasion would

Table Giving Full Particulars of All Contestants for the A. P. B. A. Gold Cup Since 1904, Their Best Time for an Entire Race, Power, Speed, Etc.

BOAT	OWNER	ENGINE	H.P.	H.M.S. P.H.	BEST RACE Time	Speed M.P.H.
First Race—Columbia Yacht Club, June, 1904—Course, 32 Nautical Miles.						
Standard	C. C. Blotts	Standard	104	1:32:20	23.6	
Water Lily	Frank Seaman	Standard	104	1:34:26	19.3	
Flat I	C. H. Tangeman	F. I. A. T.		.....	.....
Second Race—Columbia Yacht Club, Sept., 1904—Course, 32 Nautical Miles. (See Note.)						
Vingt-et-Un II	W. Sharpe Kilmer	Simplex	75	1:27:02	25.3	
Speedway	C. L. Seabury	Speedway	84	1:23:12	22.9	
Mercedes U.S.A.	H. L. Jordan	Mercedes	80	1:23:42	22.5	
Flap	C. D. Holmes	Holmes	39	1:47:30	17.5	
Marceline II	J. W. Allison		34	2:24:05	12.0	
Mercedes VI	W. E. Wandersbill, Jr.	Mercedes	60	1:21:20	26.1	
Macaroni	C. H. Tangeman	F. I. A. T.	40	1:37:21	21.5	
Shooting Star	H. A. Lester, Jr.	Lester	24	1:40:19	18.3	
Josephine	H. A. Ruchmann		19	2:30:25	12.4	
Challenger	Smith & Mabey	S. & M.	119	.....	.....
Third Race—Chippewa Bay Yacht Club, 1905—Course, 30 Statute Miles.						
Chip II*	J. Wainwright	Leighton	104	1:02:38	15.9	
Invincible	F. H. Wagon	Giant	10	1:09:19	12.8	
Shooting Star II	H. A. Lester, Jr.	Lester	24	1:14:28	14.2	
T. S. R.	A. I. Richardson	Wheeler	24	1:23:50	13.7	
Speeder	E. J. Schroeder	Speeder	24	1:16:23	15.6	
Flap	W. H. Beebe	Garratt	24	1:20:07	14.5	
So Long	George Hasbrouck	Special	24	1:20:21	14.5	
Radium	A. H. Peacock	Trebet	24	.....	.....
Panhard II	A. Massenet	Panhard	24	.....	.....
Fourth Race—Chippewa Bay Yacht Club, 1906—Course, 30 Statute Miles.						
Chip II*	J. Wainwright	Leighton	104	1:07:01	16.9	
Sparrow	F. J. Swain	Packard	24	1:21:21	12.1	
Jewel	E. S. Burke	Trebet	24	1:29:07	10.2	
Queen Again	H. M. Denny	Watertown	24	1:26:07	14.7	
Vingt-Trois	J. P. Gillespie	Watertown	24	1:28:54	13.7	
Tornado	H. W. Koerner	Sterling	24	.....	.....
Dixie	E. J. Schroeder	S. & M.	24	1:17:34	15.2	
Vingt-et-Un II	W. Sharpe Kilmer	S. & M.	24	1:17:34	15.2	
Panhard II	A. Massenet	Panhard	24	.....	.....
Radium	J. O. Reid	Fairbanks	24	.....	.....
So Long II	George Hasbrouck	Trebet	24	1:10:40	16.4	
Triton	A. T. Brown	Brown	24	Disq.	.....
Fifth Race—Chippewa Bay Yacht Club, 1907—Course, 30 Statute Miles.						
Chip II*	J. Wainwright	Leighton	104	1:06:42	16.6	
Delawanna	W. C. Irwin	Fairbanks	24	1:21:43	12.9	
Vingt-Trois	J. P. Gillespie	Fairbanks	24	1:20:17	14.5	
Stranger	F. G. Bourne	Simplex	24	1:27:07	12.8	
Flap	C. K. Peacock	Trebet	122	1:08:24	16.4	
Sixth Race—Chippewa Bay Yacht Club, 1908—Course, 30 Statute Miles.						
Dixie II	E. J. Schroeder	Crane	230	0:58:12	26.9	
Chip III	Robert Hawkins	Leighton	24	1:06:17	17.1	
Flap	C. N. Peacock	Watertown	24	1:08:04	17.2	
Jan	George Hasbrouck	2 Haynes	98	1:10:10	15.6	
Stranger	F. G. Bourne	Simplex	24	1:10:10	15.6	
Panhard	J. P. Gillespie	Simplex	24	1:10:10	15.6	
U. S. A.	J. S. Sheppard	.....	.....	.....	.....
Duquesne	Howard Peacock	.....	.....	.....	.....
Seventh Race—Thousand Islands Yacht Club, 1909—Course, 32 Statute Miles.						
Dixie II	E. J. Schroeder	Crane	230	0:58:25	26.9	
Duquesne	Howard Peacock	Jenick	200	1:07:55	16.5	
Stranger	F. G. Bourne	Simplex	24	1:13:40	14.5	
Jan	George Hasbrouck	2 Haynes	98	1:13:40	14.5	
Eighth Race—Thousand Islands Yacht Club, 1910—Course, 32 Statute Miles.						
Dixie III	F. K. Burnham	Crane	250	0:57:14	27.6	
Squaw	F. G. Bourne	Leighton	120	1:15:45	15.4	
Shipper	A. B. Quarrier	Jenick	250	.....	.....
Ninth Race—Frontenac Yacht Club, 1911—Course, 28 Nautical Miles.						
Mit II	J. H. Hayden	Sterling	100	0:52:31	34.1	
Shipper	A. B. Quarrier	.....	.....	0:58:05	34.4	
Wasp	W. Toussy	.....	.....	0:51:45	36.2	
Dixie IV	F. K. Burnham	2 Crane	450	0:51:45	36.2	
Hornet	C. L. Toussy	.....	.....	.....	.....
Tenth Race—Thousand Islands Yacht Club, 1912—Course, 32 Statute Miles.						
P.D.Q. II	Alfred G. Miles	Sterling	90	0:52:13	34.1	
Baby Helianth	H. Stuart Blackton	Sterling	150	0:51:55	37.0	
Queen Not	H. P. Denny	2 Watertown	100	0:58:17	34.1	
Wasp	W. Toussy	2 Leighton	200	0:54:20	32.3	
Mit II	J. H. Hayden	Sterling	100	0:52:44	34.1	
Stranger	W. Toussy	2 Leighton	200	1:08:47	28.0	
Bear Cat	H. Coppel	Sterling	90	.....	.....
Ankle Deep	Count Mankowski	2 Sterling	200	.....	.....
Eleventh Race—Thousand Islands Yacht Club, 1913—Course, 28 Nautical Miles.						
Ankle Deep	Count Mankowski	2 Sterling	200	0:44:59	44.5	
Mit, Jr.	Dr. J. J. Hart	Sterling	75	0:53:02	37.7	
P.D.Q. III	Alfred G. Miles	Simplex	120	0:52:44	34.1	
Little Joker	H. S. Ford	Sterling	150	0:49:24	40.5	
Mit III	J. H. Hayden	Sterling	100	0:49:40	40.2	
Sand Burr III	A. K. White	.....	115	.....	.....
Twelfth Race—Lake George Regatta Assn., 1914—Course, 30 Nautical Miles.						
Baby Speed Demon II	Paula Blackton	Sterling	180	0:41:02	56.49	
Baby Helianth V	J. S. Blackton	Sterling	180	0:41:07	56.41	
Buffalo Enquirer	W. J. Connors	Sterling	180	0:42:55	48.1	
Ankle Deep	Count Mankowski	2 Sterling	200	0:43:53	47.0	
P.D.Q. V	Alfred G. Miles	Van Blerck	300	0:44:27	46.4	
P.D.Q. IV	Dr. J. J. Hart	Sterling	180	0:46:55	42.3	
Teck, Jr.	Coleman De Font	Sterling	180	0:50:19	41.1	
Hawk Eye	Lake George Synd	Van Blerck	300	0:44:37	46.4	
Peter Pan VI	James Simpson	Van Blerck	200	.....	.....
Harpoon	W. H. Young	Van Blerck	180	.....	.....
Thirteenth Race—Long Island Sound P. B. Association, 1915—Course, 30 Nautical Miles.						
Miss Detroit	M. D. P. B. A.	Sterling	250	0:42:41	48.5	
Teck, Jr.	C. Du Pont	Sterling	250	0:44:20	46.2	
Freto	C. G. Fisher	Sterling	250	0:50:00	41.3	
Baby Helianth V	J. S. Blackton	Sterling	250	0:43:26	47.5	
Baby Speed Demon II	F. H. Blackton	Sterling	250	0:42:59	48.5	
Little Joker III	H. S. Ford	2 Sterlings	500	DNF	.....
Woe Peter Pan II	O. E. Vignoux	Wileonin	180	DNF	.....
Ankle Deep Two	C. S. Mankowski	2 Sterlings	200	DNF	.....
Ridley Wink	T. Chessbrough	Sterling	250	DNF	.....
Fourteenth Race—Miss Detroit Power Boat Association, 1916—Course, 30 Nautical Miles.						
Miss Minneapolis	M. M. B. A.	Sterling	250	0:41:21	49.7	
Miss Detroit	M. D. P. B. A.	Sterling	250	0:41:20	49.6	
Hawk Eye	A. L. Judson	Van Blerck	300	0:46:20	44.9	
Peter Pan VII	J. Simpson	2 Sterlings	500	0:42:11	49.6	
Baby Speed Demon	H. Willis	Van Blerck	300	0:52:14	39.5	
Miss Hamtramk	Del Ray M. B. C.	Maximotor	100	DNF	.....
Fifteenth Race—Miss Minneapolis Boat Association, 1917—Course, 30 Nautical Miles.						
Miss Detroit II	G. A. Wood	Sterling	250	0:38:47	54.5	
Miss Minneapolis	M. M. B. A.	Sterling	250	0:40:04	51.7	
Hawk Eye II	A. L. Judson	Van Blerck	300	0:48:25	42.8	

* Winner on corrected time.
NOTE: The course on the first day of the second race was only 27 1/2 nautical miles, and all the contestants with the exception of Vingt-et-Un II made their best time on this course.

result in the joining hands of the two largest racing organizations in the world, toward uniform and standard racing conditions, and that steps might be taken for the betterment of the sport generally all over the country. What slight hope there might have been before the races is now gone, dead forever, for with one exception not a single official or member of the M. V. P. B. A., the organization which claims to be devoted to developing and promoting motor boating in the Heart of America, showed up at the Regatta. The western organization absolutely boycotted the races, whether intentionally or unintentionally it could not be learned.

The single exception just mentioned was no other than A. L. Gibson, Vice-Admiral of the Mississippi Valley Association. Admiral Gibson was present throughout the meet and did everything in his power to make the races a success. His runabout Thoroughbred was a life saver, for with Panama and a few other boats from the St. Paul Motor Boat Club, was obliged to do most of the work connected with the Regatta. Commodore Gould and Meek of Chicago also rendered valuable assistance and advice.

The first race was originally scheduled for Thursday afternoon, Aug. 23rd, but as things were topsy-turvy at noon on that day a sudden shower which appeared at that time was taken as a good omen for calling off the races for the day. This announcement relieved the minds of the owners and crews, most of whom had been on the job continually for the previous thirty-six hours. They slowed up their pace a little and prepared their craft for their first trial trips on the Mississippi. Had the races been called as originally scheduled it would have been necessary for at least three of the boats to go into the race without a trial or even a run once around the course.

Miss Detroit II was the first to take the water and after a few minutes' run she was sighted coming up the river at the southern end of a tow line. A valve stem had snapped, dropped down into the cylinder and completely wrecked the piston.

Next Hawk Eye II was hoisted off the scow, which played the part of her host during the week, and lowered into the river. George Reiss, her driver, stepped on the starting button and the eight-cylinder Van Blerck responded with a roar. Orders were given to cast off and Hawk Eye II was headed down stream. The boat planed beautifully and seemed to be running smoother and faster than at the Thousand Islands races earlier in the month. She made one circuit of the six-mile course at a speed of about 50 miles an hour, but when she did not come around again when it was time no one noticed it as more exciting things had been happening in the meantime.

Whip-po-Will, Jr., the dark horse of the year, and believed to be faster than anything which has ever floated, was to be given a trial. The crowd gathered along the bank on both sides of the river and watched the proceedings of getting the boat into the water. As the outfit weighed in the neighborhood of five tons it was a mighty task

(Continued on page 52)



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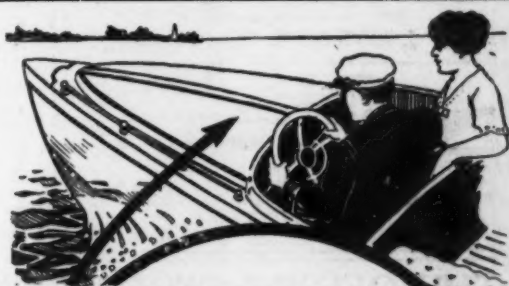
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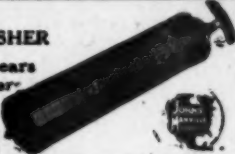
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Racing for the Gold Cup

(Continued from page 50)

with the facilities at hand. Every one held
their breath as the derrick which was there
to lift and lower the boats, creaked and nearly
rolled her deck under before "Whip" was
launched. In spite of what was feared, the
gear on the derrick held and the boat was
floated without accident.

It was but a moment's work to get the lash-
ings unfastened and the crew consisting of
Commodore Judson at the wheel, Jack Beebe
at the throttle and Johnson as motorman, took
their places behind the twelve cylinders of the
mammoth Van Blerck which was supposed to
develop between 400 and 500 h.p. at full speed.
The motor responded to the first touch of the
self-starter and the commodore headed his
speedster down stream. After a few miles of
maneuvering he brought her to the pier of
the gasoline station where her tanks were filled
with a few hundred gallons of the precious fluid.

Now for her first trial. While we knew
that "Whip's" crew had no intention of let-
ting the boat out to her limit on the first
time around yet we thought we'd clock her
just to satisfy our own curiosity. Down to the
starting line she came and as she went across
we snapped our watches. The boat did not
have the appearance of traveling so very fast
as she was running on a perfectly even keel,
high out of the water and with very little
fuss or surface disturbance. The motor was
not at all noisy, that is, from where we stood
a hundred yards or so from the course. Every
cylinder seemed to be hitting regularly with
equal pep.

In a jiffy the boat was around the first turn,
a mile down the course, and in about two more
jiffies we could see her coming back. In just
7 minutes 44 seconds from the time she went
across the starting line Whip-po-Will Jr. had
completed the circuit of 6 nautical miles, a
speed of just under 55 miles an hour, which
on the first attempt wasn't so bad.

The river at the upper turn is only about
500 feet wide. Any properly laid out turn
should allow even the fastest boat in the world
to make it without slowing down but when
"Whip" tried to make the turn it showed the
westerners in about one-fifth of a second what
a whole year of corresponding had failed to
drive home. As the helm of the racing craft
was put over, the boat responded with such a
rush that had there been less density to the
water there would have been a loop the loop.
So fast did it all happen that the crew were
not even thrown out. The boat literally turned
over on top of them. Fortunately, except for
a few severe bruises, the three men reached
shore safely.

The hull sank, stern first, in about twelve
feet of water, but the nose of "Whip" re-
mained pointing upward several feet above
the surface, as though she was defying some
one and promising revenge if she was given
a chance later. But the chance did not arrive
on the Mississippi. While efforts were made
to prepare the motor for some of the races,
yet it was not thought advisable to run the
risk of a repetition of the affair and so Whip-
po-Will Jr. was not put overboard again.

While all of this activity was underway the
crew of Miss Minneapolis, the only other en-
trant in the Gold Cup Races, were busy put-
ting the final touches on their outfit and final
touches they proved to be. It will be remem-
bered that Miss Minneapolis up to now was
an undefeated boat. The year of 1916 failed
to produce a boat which could give her a
good run for the money but the advance re-
ports as to the speeds of some of the 1917
craft, such as Miss Detroit II and Whip-
po-Will Jr., gave the owners of Miss Minne-
apolis such a fright that they decided some-
thing must be done to make the western boat
step along at a little livelier clip. So at the
eleventh hour they ripped out the old reliable
eight-cylinder Sterling and substituted an aero-
plane motor of another make. Although the
new power plant presumably had nearly double

(Continued on page 54)

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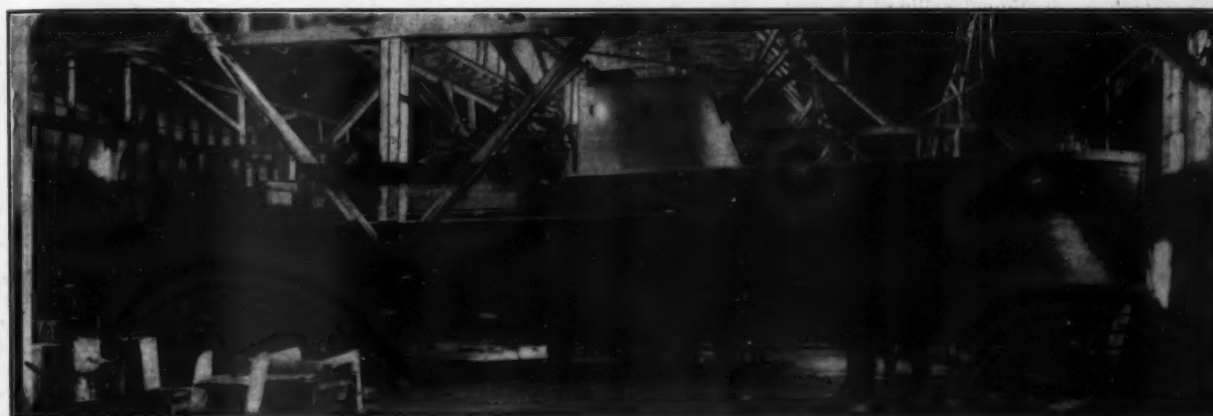
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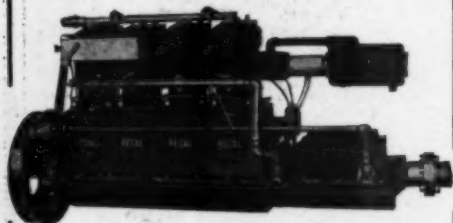
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Racing for the Gold Cup

(Continued from page 52)

the power of the old one, in addition to all kinds of claims as to what service she was capable of, yet it all went for naught when the test came.

After Miss Minneapolis had made a run of about two miles in length there was not much left of the motor except a mass of junk.

So with Whip-po-Will Jr. at the bottom of the river, and Miss Minneapolis down and out, those in charge began to take stock of what boats were left so as to see what the possibilities were for a race later in the week. Suddenly some one remembered that Hawk Eye II hadn't been heard from for some hours, although she had started around the course earlier in the day. It was decided to send Thoroughbred down the river to see what had happened to the racer and way down a mile or more below the lower end of the course they found Hawk Eye II amongst the logs and bushes, with her crew frantically holding onto some overhanging limbs of a nearby forest. Only a couple of pistons had broken and being unable to save herself Hawk Eye II had drifted down with the current further and further until the friendly forest came alongside. The boat and crew were towed back to the hospital with the rest of the cripples and thus ended the first day of the Gold Cup Races.

Miss Detroit II was the only boat ready to race on Friday. At a meeting of the race committee Gar. Wood, her owner, in a true sportsmanlike manner, waived all his rights and consented to a postponement for the day to allow the other boats more time to repair the damage of the day before. The owners of Miss Minneapolis decided they would replace the 1916 motor in their craft and Hawk Eye's crew by working forty-eight hours at a stretch would be able to take their motor completely apart and reassemble it with new and heavy pistons and connecting rods. Whip-po-Will Jr. was raised but it was found that the mud from the river and bottom had found its way into the cylinders and bearings which necessitated taking the motor completely down. This would keep the boat out of the races for four or five days, although Commodore Judson had a force of nine men with him and a complete machine shop.

The races were held on Saturday, Sunday and Monday. Miss Detroit II, Miss Minneapolis and Hawk Eye II started in all three. Miss Detroit had everything her own way, winning each race and making the fastest time in every lap, besides getting over the starting line first each day. In other words there was nothing to it except Miss Detroit II. She not only made faster time in each succeeding race but established a world's record each day for the race and fastest lap.

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Throughout the racing Miss Detroit II was handled and steered by her owner, G. A. Wood. In every particular he proved himself a capable and true sportsman.

In the mile trials which were held on Tuesday, Aug. 28th, Miss Detroit II was the only contender, and even without a pacemaker she had no difficulty in establishing a new world's record of 61.72 miles an hour.

The complete summary of all the races will be found on pages 7 and 50.

Summary of Gold Cup Races of 1917.

Boat	Time		
	1st Race	2nd Race	3rd Race
Miss Detroit II	0:40:59	0:36:59	0:36:47
Miss Minneapolis	0:51:03	0:40:04	0:42:26
Hawk Eye II	2:05:43	0:48:23	D N F

Each race 30 nautical miles in length.

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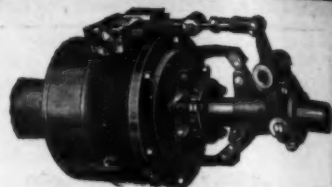
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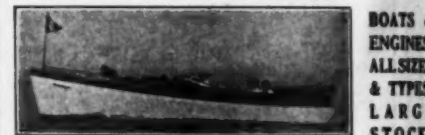
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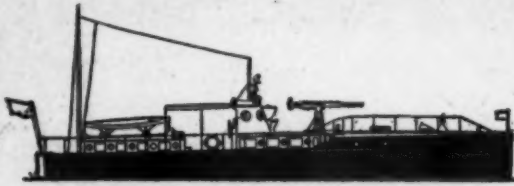
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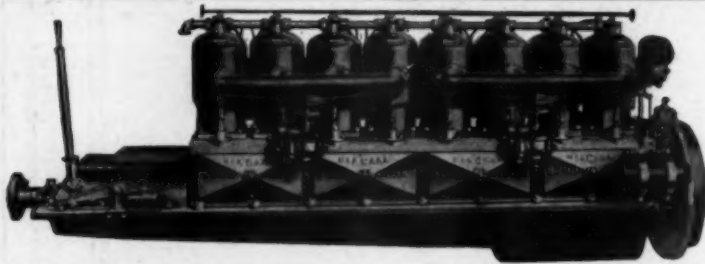
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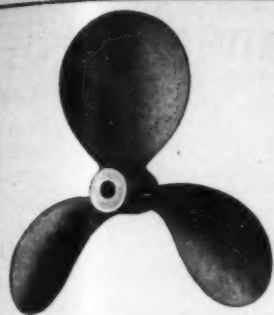


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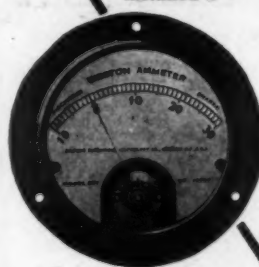
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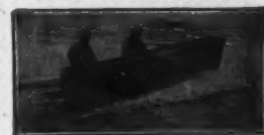
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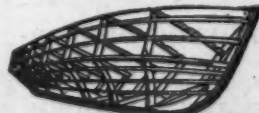
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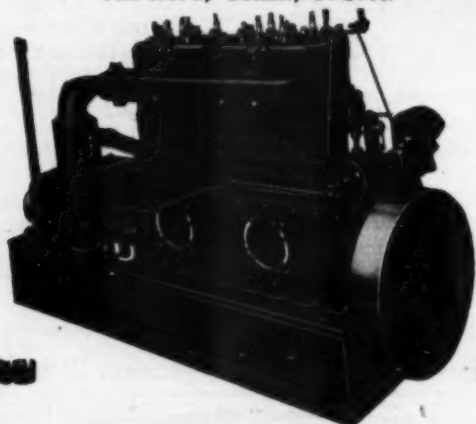
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LUNKENHEIMER

HIGH GRADE Motor Accessories

For all types of Internal Combustion Engines



Each device designed for a particular purpose; practical and durable in construction, and reliable in operation.



They give continuous satisfactory service, with the greatest safety and economy.



Your motor "Lunkenheimer-equipped" is a safeguard against those vexatious experiences which break operating schedules and often spoil the pleasures of motor boating.



Our Motor Accessories Catalog No. 4-CC, illustrating the complete line will be sent on request. Write for a copy.

Your local dealer can furnish Lunkenheimer Motor Accessories; if not, write us.



THE LUNKENHEIMER CO.

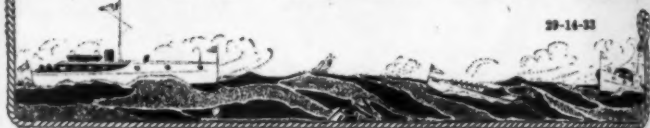
"QUALITY"

Largest Manufacturers of
High Grade Engineering Specialties
in the World
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29-14-33



"NORMA" BALL BEARINGS

(Patented)

So small a thing as the bearings of the magneto or lighting generator may set the limit to the service capacity of a motor boat. The failure of such a bearing, impairing the ignition or the lighting, may result in the condemnation of an otherwise high-class boat.

The almost universal standardization of high-grade magnetos and lighting generators on "NORMA" Ball Bearings is proof of the confidence the makers of these accessories have in "NORMA" Quality as a safeguard to themselves and to the builders and owners of boats and engines.

Be SURE. See that your Electrical Accessories are "NORMA" Equipped.



THE NORMA COMPANY OF AMERICA

1790 BROADWAY NEW YORK
BALL, ROLLER, THRUST AND COMBINATION BEARINGS

GIES REVERSE GEARS RADIATE SATISFACTION

THE REVERSE GEAR IS THE MOST IMPORTANT
UNIT OF YOUR MOTOR BOAT EQUIPMENT.

Our Sales Department Has Thirty-five THOUSAND of the BEST SALESMEN IN THE WORLD. You will find them in every state in the Union. You will have no trouble in distinguishing them for they have GIES GEAR COMPANY stamped on their backs. We expect every salesman to do his duty and want you to report any misconduct on his part. Whenever one of our salesmen is found wanting in any particular he is immediately recalled and a new one sent out in his place. This has been and always will be the policy of the GIES GEAR COMPANY.



Your outfit is no stronger than your reverse gear

No. 1 Open Type	\$18.00	Model A Open Type	\$28.00	Model B Open Type	\$48.00
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GIES GEAR COMPANY

47 EAST FORT STREET DETROIT, MICHIGAN


ROBERTS MOTORS

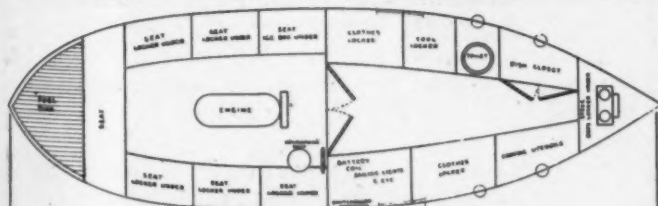
For a Heavy Duty Fisherman's Engine that will stand the hardest kind of service, take a look at this Roberts Motor. It is a wonder for power, strength and dependability.

The Bore is 6", stroke 6 1/4", developing 8 H.P. at 300 R.P.M. and 10 H.P. at 400 R.P.M. Operates on either gasoline, kerosene or distillate. Furnished with either Jump Spark or Make-and-Break Ignition.

Write today for prices, specifications and blue prints. We build a complete line of motors, marine, aircraft and stationary. We have the right motor for your boat—at the right price.

Roberts Motor Mfg. Co. 1005 ROBERTS BUILDING
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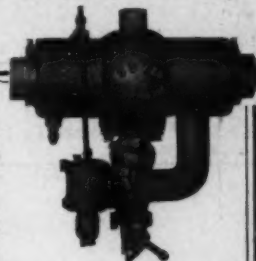
Life boat cruiser, 30 ft. x 9 ft.; powered with a 15 H.P. four-cylinder, four-cycle Buffalo motor, with reverse gear. Speed 8 miles per hour. Main cabin 15 ft. long, galley in the bow with dish closet, five large lockers, electric lights, ice box, switchboard, dynamo, extension berths sleeps four, cushions and pillows. Cockpit 11 ft. x 9 ft., 60 gallon fuel tank aft. Toilet forward. One man control. Hull built of cedar and as sound as the day she was built. Cabin white enamel. Signal mast, cockpit awning, curtains and etc. Boat fully equipped. Box 15, MoToR Boating.



The Olsen KEROSENE Vaporizer

cuts your fuel cost 60% to 70%

The only proven successful Kerosene burner on the market.



Felder "A" gives some mighty valuable facts. May we send you one?

The Olsen is easily installed on any 4 cycle motor using a 1 to 3 inch carburetor, whether high, low or medium speed. It develops more power and flexibility than is possible with the same amount of gasoline—burns clear kerosene without smoke or carbon. Adopted as standard equipment by one large marine motor manufacturer for 1918.

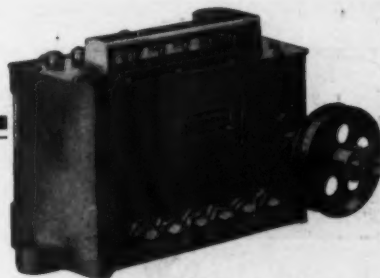
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One of the most recent boats to be equipped with an Olsen vaporizer is the Northern Messenger, a 45-foot ketch recently built for the Dr. Grenfell Society of Labrador.

United States Vaporizer Company

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Boston, Mass., U. S. A.



Making Engines Last Longer

Many an engine that is in regular service is wearing out twice as fast as it should because it is not equipped with a positive, reliable lubricating system. The best of materials and workmanship, the best of attention and care by the owner, are offset by an inefficient hit-or-miss oiler.

Manzel Force Feed Oilers

Manzel Force Feed Oil Pumps are making engines last longer wherever they are used. Geared to the engine and feeding in exact proportion to engine speed, they force the oil to each friction surface independently and reduce actual wear to a negligible factor.

Manzel Oilers are made in all sizes, from one to fifty feeds, and can be fitted for any type of drive desired.

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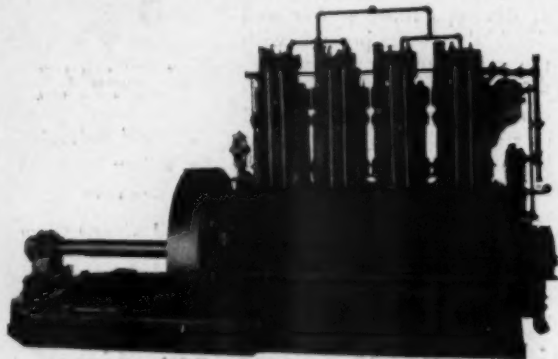
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Thousands in use now in sizes from 1½ B.H.P. to 100 B.H.P. per cyl.



View showing a 40 B.H.P. Hvid Oil Engine as built by the
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THERE may be lots of materials suitable for boat upholstery, but for actual service and wear nothing can surpass Du Pont Fabrikoid, Craftsman Quality. It is water, dirt and grease-proof. It will not stain and when soiled can be easily cleaned with a damp cloth.

It has all the luxurious feel and appearance of the finest leather and makes up easily into the most serviceable of cushions and handsome cabin decorations. It is made in a variety of plain-grain or Moorish effects and offers a wide selection of colors.

Rayntite for Tops

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World's Largest Makers of Leather
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Robs Motor Boating of its greatest danger—adds to its pleasure and does

away with that constant worry about the flying spark, the careless match and the leaking gasoline. The

"JASCO TANK"

is the one absolutely safe gasoline receptacle for all motor boats. Constructed scientifically from the best steel obtainable, drawn, tinned and tested. The "Jasco" cannot leak under the most strenuous service. It will put a new standard of "Safety First" in your motor boating. All styles, all sizes.

Write for free "Marine
Signal Card" in full colors

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IT is of vital importance to have an engine that is thoroughly dependable—and also economical to operate and maintain. It must be easy to control and to care for, and should you desire to sell the market value must be high.

The *Automatic* cruiser engine is designed and built to give efficient service. It is simple in construction, with all working parts easy of access. It is an engine that will last for years with minimum expense for upkeep.

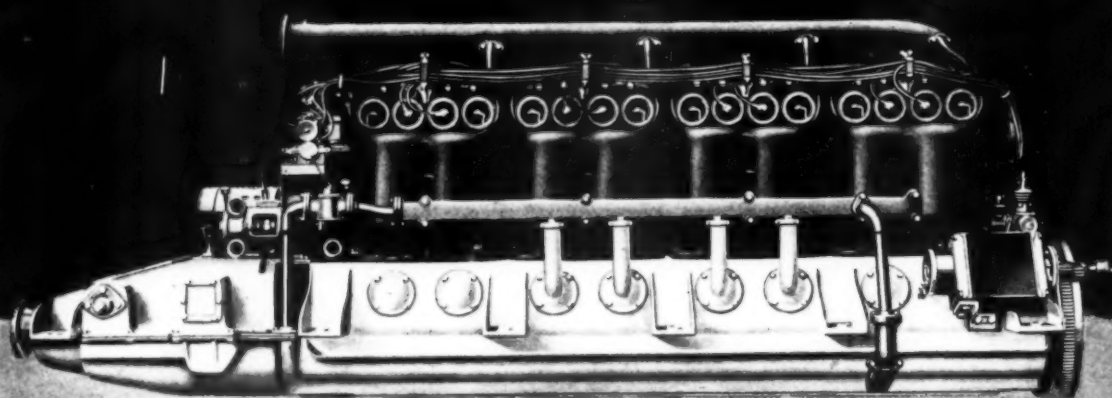
It insures satisfactory power under all working conditions, and at the lowest possible cost. It utilizes low grade fuel to advantage and may be operated on kerosene or producer gas. Built in two to six-cylinder models, 30 to 250 H.P. Catalog on request.

The Automatic Machine Co.

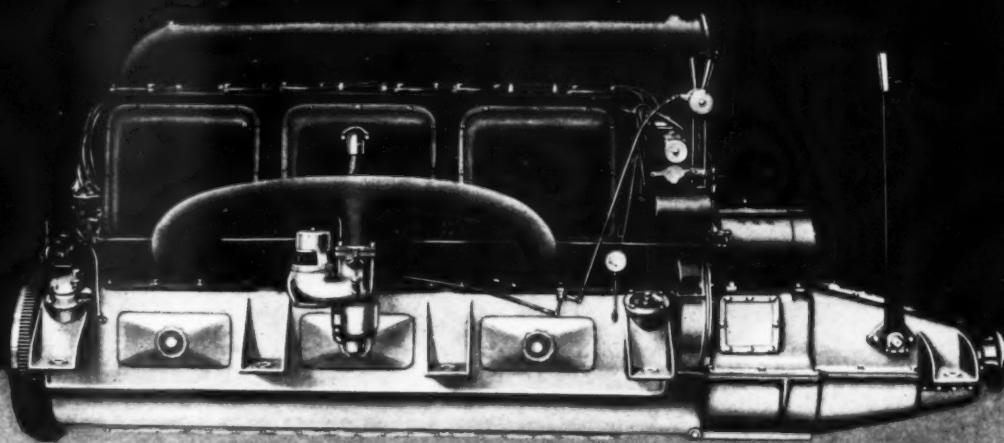
BRIDGEPORT CONNECTICUT



*Announcing the
1918 Duesenberg
Marine Motors*



1918 Model
DUESENBERG MARINE ENGINE
(EIGHT-Cylinders)
Bore, $6\frac{3}{4}$ " Stroke, $7\frac{3}{4}$ " 280-360 H. P.
Net Price, \$7,000.00



1918 Model
DUESENBERG MARINE ENGINE
(SIX-Cylinders)
*Bore, 6 $\frac{3}{4}$ " Stroke, 7 $\frac{3}{4}$ " 200-260 H. P.
Net Price, \$5,500.00*

A large, stylized capital letter 'D' is centered at the top of the page. It is enclosed within a circular frame that has a textured, metallic appearance. The 'D' itself is solid black with a white outline.

The Duesenberg 1918 Models are an evolution of the Duesenberg Engines of previous years. The basic design remains the same. The dominating features that have made Duesenberg Engines the highly efficient big motors they are today, are retained in their entirety. Refinements have been made here and there. The new engines are quieter, better looking, more dependable, if that be possible. Increased production, highly specialized manufacturing methods, all tend to improve the engines. The use of special metals and alloys increases their durability.

A remarkable book has been prepared in which these engines are illustrated and described in detail. In this book has been collected all the necessary details pertaining to these motors, yet this data is displayed in an easily readable manner. This book is not a catalog, does not read like one, look like one or pretend to be one. In it you will find page after page of beautiful boat pictures illustrating the spectacular, successful boats of the season. These boats represent the highest attainable degree of beauty, luxury and efficiency. It is an inspiration to look at them.

The book itself is a work of art, elaborately illustrated and decorated. Probably the most beautiful piece of printed art of the year. It is an art gallery of the best boats, the fastest boats, the most luxurious boats. You will retain it for its beauty, for its uniqueness, for the valuable information it contains.

This book will be mailed promptly upon request. Owing to the high cost of producing such a book it is necessary that all requests be accompanied by a remittance of One Dollar unless the request be written on the stationery of a rated firm or individual.

Duesenberg Motors Corporation

120 Broadway, New York City

V
2
410

10

A Chain Is No Stronger Than Its Weakest Link

The 1918 models of the Duesenberg Marine Engine, as announced on the preceding pages, were designed to provide the utmost in dependability. No weak links could be allowed in their construction.

The Duesenberg is the biggest standardized high speed engine manufactured today. Furthermore, it is the most expensive high speed engine on the market.

Necessarily every part, every accessory, every piece of equipment that goes into the make-up of these motors must be the best obtainable, regardless of price—regardless of any qualifying conditions.

In designing these engines the Duesenberg engineers had the entire American manufacturing and accessory market to draw upon. They were unlimited in their freedom of choice. Quality and efficiency were the only standards. And these men had facilities for testing and comparing that are found in only the most important industrial organizations.

That the following manufacturers were selected to supply many of the vital parts and equipments of the new Duesenberg engine is a distinct compliment to them, and a splendid indorsement of the merit inherent in their products.

American Bronze Company, Berwyn, Pa.
Columbian Bronze Corp., Freeport, N. Y.
Connecticut Tel. & Elec. Co., Meriden, Conn.
General Aluminum & Brass Mfg. Co., Detroit, Mich.
P. H. Gill & Sons, Brooklyn, N. Y.
The Leece-Neville Co., Inc., Cleveland, Ohio.
Walker M. Levett Co., New York City.
Muskegon Motor Specialties Co., Muskegon, Mich.
Paragon Gear Works, Taunton, Mass.
Rich Tool Company, Chicago, Ill.
S. K. F. Ball Bearing Co., Hartford, Conn.
Splittorf Electrical Co., Newark, N. J.
Trimount Rotary Power Co., Boston, Mass.
Wheeler-Schebler Carburetor Co., Indianapolis, Ind.
Wyman-Gordon Co., Worcester, Mass., Cleveland, Ohio.

Non-Gran Bushings
Columbian Propellers
Connecticut Ignition
Ring-True Bearings
Crankshafts
Leece-Neville Starter
Magnalite Pistons
Integral Camshafts
Paragon Reverse Gears
Rich Tungsten Valves
S. K. F. Ball Bearings
Dixie Magnetos
Trimount Pumps
Schebler Carburetors
Drop Forgings.

Leece-Neville

Electric Starting and Lighting System

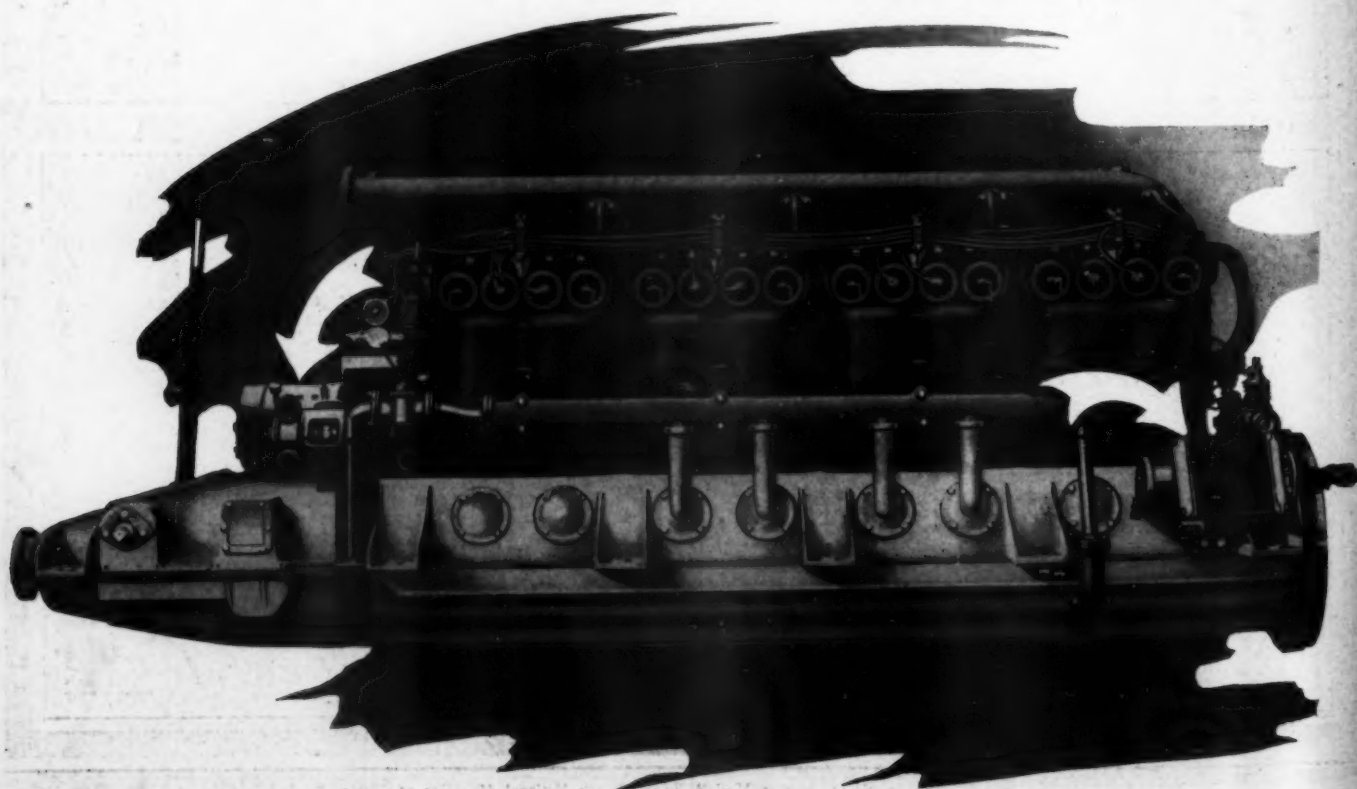
The de-luxe starting and lighting equipment. Leece-Neville Electric Starting and Lighting Systems are used exclusively on all Duesenberg Marine Engines. The Leece-Neville System operates as efficiently and dependably on the big 6 $\frac{3}{4}$ " x 7 $\frac{3}{4}$ " Patrol Model eight cylinder Duesenberg Marine Engine as it does on the sixteen valve, four cylinder White automobile motor, Haynes twelve cylinder motor, etc.

Wherever you find a manufacturer of an engine demanding the utmost attainable in starting and lighting systems, there you will find Leece-Neville adopted as standard equipment, simply because Leece-Neville build a system to do the extraordinary things in an ordinary manner,—build a system that is so designed that no conditions of service can find it wanting.

Naturally it costs more to design and build a system as super-efficient as the Leece-Neville, but it really is worth a little more to know positively that your starting and lighting system can be depended upon, no matter what the conditions may be.

All really worth while Marine Engines are using the Leece-Neville Electric Starting and Lighting System, or will supply it if you ask for it when you order your motor.

THE LEECE-NEVILLE COMPANY, Inc.
CLEVELAND, OHIO



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Advertising Index will be found on page 38

SKF BALL BEARINGS



Roughing the Sea and Air With a Duesenberg SKF Motor

Plowing thru rough sea at express speed—soaring miles in the air with fast airplanes soon test out the merits of bearings. That is why you will find SKF at the business end of all Duesenberg Motors. Particularly on this big 60 foot 360 H.P. Submarine Chaser. The big bearing between the reverse gear and the coupling is SKF because this is the point that has to carry

not only the load of the 360 H.P. back of it, but also has to withstand efficiently the tremendous thrust of the propeller turning at high speed.

Two rows of balls and automatic alignment within the bearing absorb heavy strains which cause shaft deflection. No wonder then that the American, French and Russian Marine and Aeroplane constructors employ SKF at the vital points.

SKF BALL BEARING CO.
Hartford, Conn.

Cam Shafts



"Inquirer," 62' x 11' 6" x 3' 9" Express Cruiser. Owned by Col. James Elverson, Philadelphia. Speed 30 M.P.H. with a pair of eight cylinder 280-360 H.P. Duesenberg Marine Engines, using our integral camshafts.

All Duesenberg Engines, whether Marine, Automobile or Airplane, use our integral camshafts exclusively. The Duesenberg engineers have proven to their complete satisfaction that our integral camshafts are the most efficient obtainable. They have found that, because we concentrate our entire resources and ability on making camshafts, we are able to produce a better camshaft and are also able to make the proper kind of deliveries.

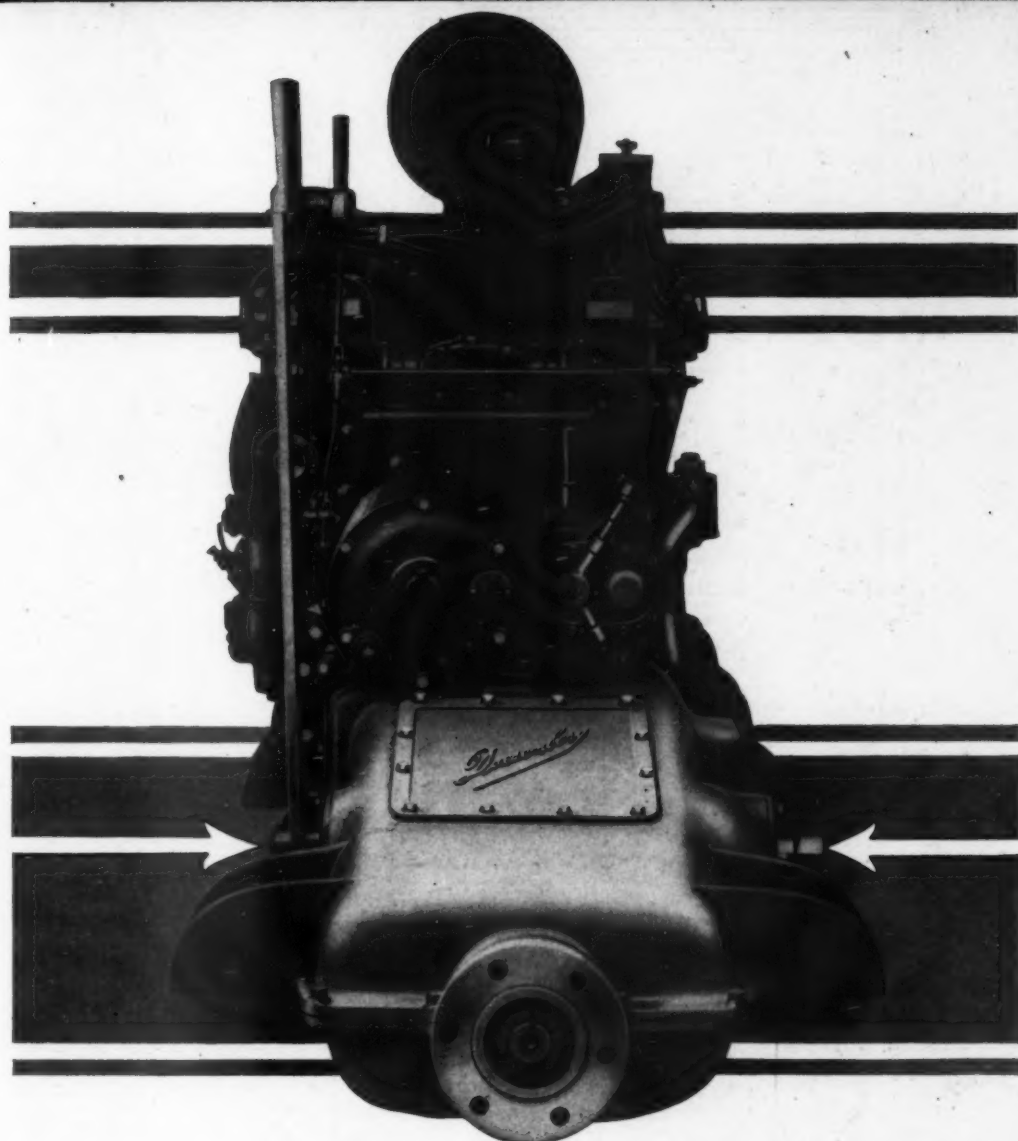
Our integral camshafts have revolutionized the manufacture of camshafts. In order to build them with the cams, gears, flanges, etc., integral, it was necessary to design special machinery of many kinds. We probably have in our big factory at Muskegon to-day more machines built to our special order and to our special design than any other factory of a similar type in the country.

The making of Integral Camshafts is a SPECIALTY; we have specialized on it and reduced it to a SCIENCE.

Our workmen, our machines, our factory, our executives, are all trained to build the most efficient camshafts that modern engineering science can produce. That we have created a reputation unique in this line is evidenced by the tremendous bulk of orders now on hand, and by the constant growth of our business, resulting in almost monthly additions to our factory.

MUSKEGON MOTOR SPECIALTIES COMPANY, Muskegon, Mich.

PARAGON REVERSE GEARS



The Biggest High Speed Marine Engine Uses the Paragon Reverse Gear

The big eight cylinder $6\frac{3}{4}$ " x $7\frac{3}{4}$ " Patrol Model Duesenberg Marine Engine uses Paragon Gears as standard equipment. So does the six cylinder Duesenberg of the same cylinder size.

Fred. S. Duesenberg, the designer of these two wonderful engines, has experimented with all kinds and descriptions of Reverse Gears. He would not have hesitated to design an entirely new gear of his own, had he not been perfectly satisfied with the best standard gear the market afforded.

That he has finally settled on the PARAGON as the utmost attainable, is a compliment to PARAGON

GEARS and also proof positive of the dominant position held by the Paragon Gear Works as designers and builders of Reverse Gears that can be depended upon, no matter how hard the requirements or conditions may be.

Paragon Gears have been adopted as standard for practically all the leading makes of marine motors because they have proven themselves to be absolutely dependable in service,—because they will actually do in service what is claimed for them on paper.

Your new motor, no matter what its size or make, should be equipt with a Paragon Reverse Gear. It will be if you insist upon it.

Write to-day for the complete descriptions of standard Paragon Reverse Gears.

PARAGON GEAR WORKS

Cushman St.

Evans Stamping and Plating Co.

Taunton, Mass.

CRANKSHAFTS

CRANKSHAFTS for the biggest high speed marine engine manufactured in this country are forged and finished by us. The crankshaft used in the eight cylinder 280-360 H. P. Duesenberg Marine Engine is probably the finest example of crankshaft building.

We specialize on work of this nature, having the facilities for handling the most difficult of machine work and forging, no matter whether the parts be small or large. Our plant and equipment is such that we can handle a tremendous volume of special work and we invite the inspection of our facilities by those interested.

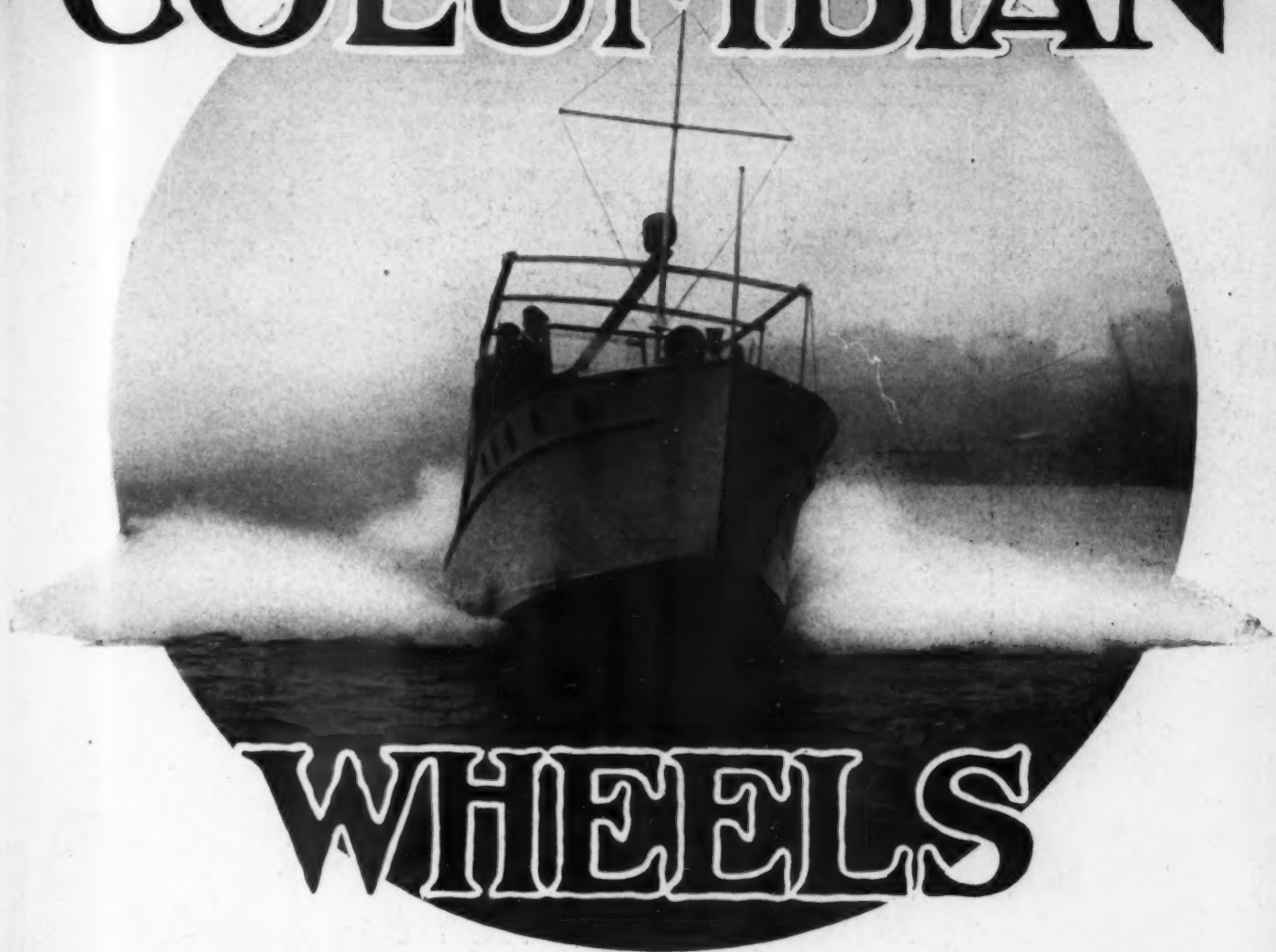
P. H. GILL & SONS

Brooklyn, N. Y.



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COLUMBIAN



97% of Duesenberg Powered Boats are Colombian Equipt

The spectacular, the successful boats of this season are using Colombian Propellers, just as the spectacular, successful boats of other seasons have done. Colombian Propellers have given these boats more speed, more efficiency. The tremendously high tensile strength of the material used in Colombian Propellers makes the life of a Colombian Propeller exceed the highest expectations.

"Marjo"—the boat illustrated above, is a typical example of the type of boat using Colombian Propellers. "Marjo" is a 40' x 8' Express Cruiser owned by Joseph McAleenan, New York, and designed and built by the Albany Boat Corp. Powered with an eight cylinder Duesenberg engine operating a 26" x 34" Colombian Architect Propeller, this boat has made a speed of 37 M.P.H. and holds the record for running time between New York and Albany. It also has won a number of races in the vicinity of Great South Bay.

Every really successful boat owes much of its success to its propeller equipment. The fact that a predominating majority of successful boats use Colombian Propellers is a strong argument why YOU should equip your boat with them. Write today for "Propellers in a Nut Shell"—a very interesting little book.

COLUMBIAN BRONZE CORPORATION

Successors to Colombian Brass Foundry

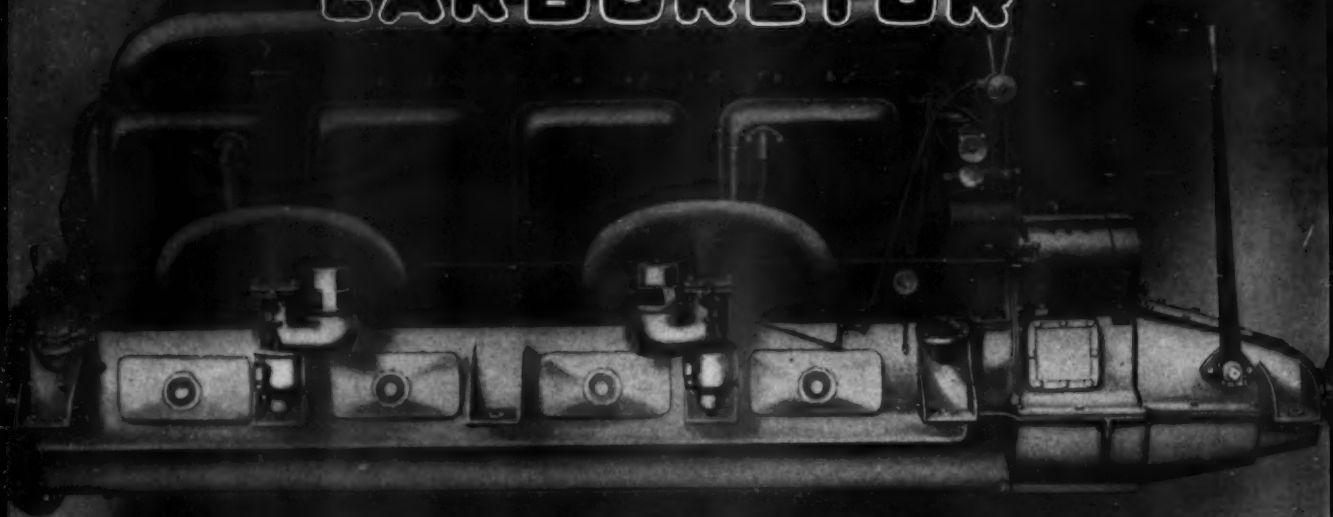
218 North Main Street

Freeport, Long Island, N. Y.

New York Branch for Local City Sales Only, Concourse, 50 Church Street

SCHEBLER

CARBURETOR



Duesenberg Engines Use Schebler Carburetors as Standard Equipment

SCHEBLER Carburetors are used on the big eight cylinder 280-360 H. P. Duesenberg Patrol Model Engine, the biggest high speed engine of the age, just as they are on by far the bigger majority of successful marine engines.

Marine engine manufacturers have found Schebler Carburetors to be simple, highly efficient and absolutely dependable. They have been able to get more power, more flexi-

bility with Scheblers than with any other type of carburetor. Hence these manufacturers standardised on the Schebler Carburetor for their regular equipment.

If your next engine is not Schebler equipped it ought to be for your own safety and satisfaction. Be sure and investigate this point; it's vitally important to you; it has a direct bearing on the pleasure to be obtained from the use of your boat.

The Wheeler-Schebler Carburetor Company, Inc.
Indianapolis Manufacturers U. S. A.

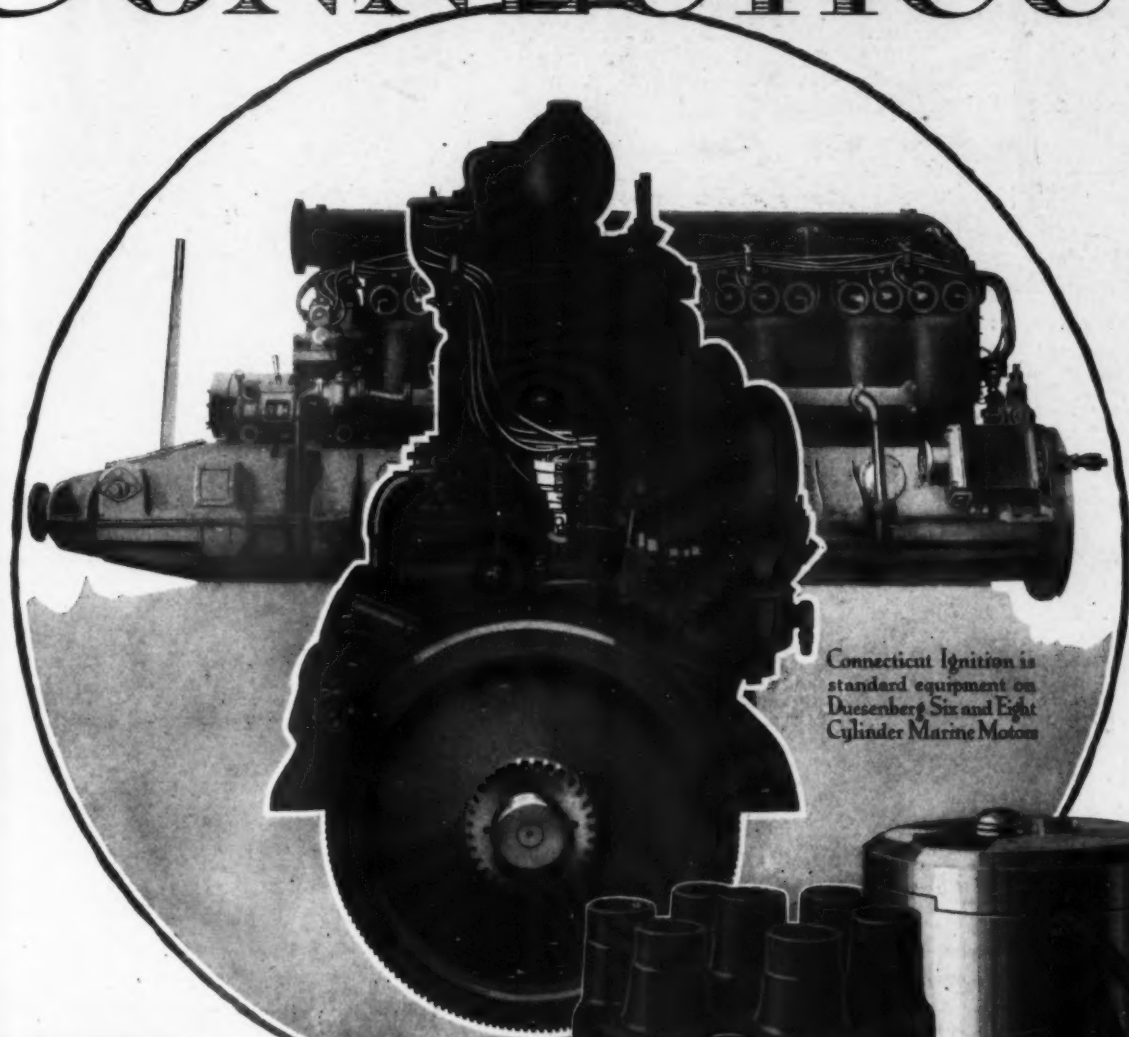
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MARINE EQUIPMENT CONNECTICUT



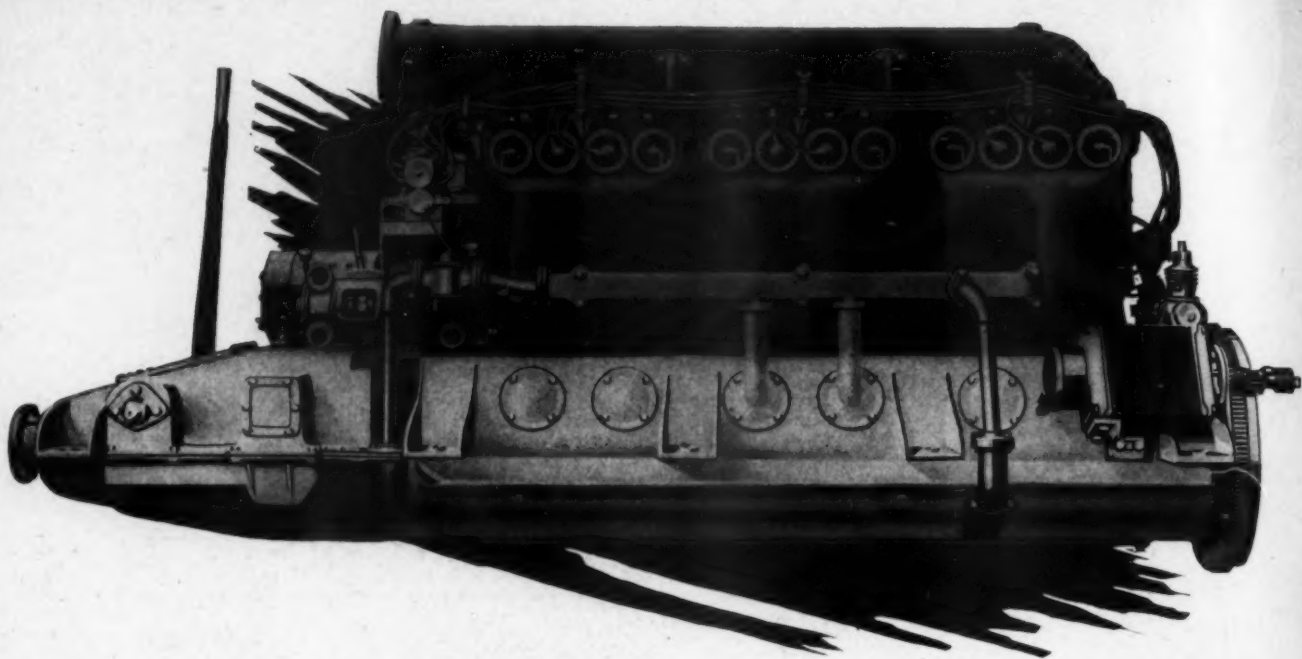
Connecticut Ignition is
standard equipment on
Duesenberg Six and Eight
Cylinder Marine Motors

POWER

Connecticut Ignition always delivers a hot spark. If the motor is running slowly and under adverse conditions, the spark increases in intensity to meet the situation.

CONNECTICUT TELEPHONE & ELECTRIC COMPANY
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DUESENBERG

THE failing of any one of the score of wear-subjected bushing parts in a marine motor will cause that otherwise magnificent whole to be taken out of service and to be sent to the repair depot, where it must be completely dismantled to get at that worn bushing to renew it.

That's why the producers of Duesenberg Motors take *no* chances on the *quality* and the *uniformity* and the *fineness* of these vital parts—they employ Non-Gran Bronze exclusively for *all* wear-subjected non-adjustable bushings in *every* motor they build, whether aviation, automobile or marine.

No motor can work longer than its bushings can resist wear.

The finest motors built in America to-day, whether automobile, truck, tractor, airplane or marine, are protected with bushings of Non-Gran quality and Non-Gran uniformity. The employment of such protection is but the natural step of American business logic.

American Bronze Company
Berwyn Pennsylvania

HIGH SPEED
NON-GRAN
BEARING BRONZE



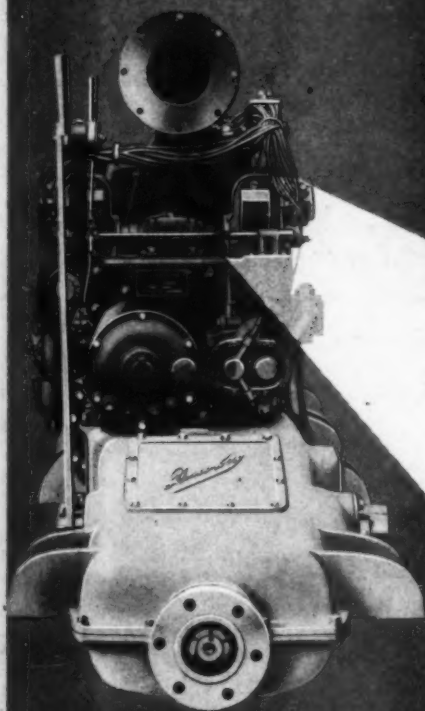
DEPENDABILITY

Illustrated above is the 64-foot Patrol Cruiser "*Bonita*" recently presented by Mr. Hermann Oelrichs to the U. S. Government, which is powered with two eight-cylinder 280-360 H. P. Duesenberg Engines, each equipped with a pair of Dixie Magnetos. These are the largest high-speed engines in America. With them the "*Bonita*" develops a speed of 27 miles an hour.

Duesenberg Engines, which form the power plants of many fast express cruisers and patrol boats, are equipped with DIXIE MAGNETOS.

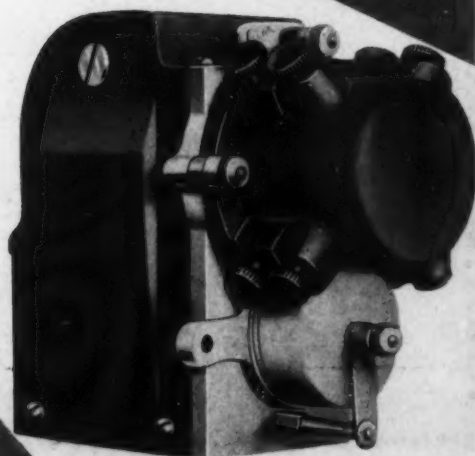
SPLITDORF ELECTRICAL CO.

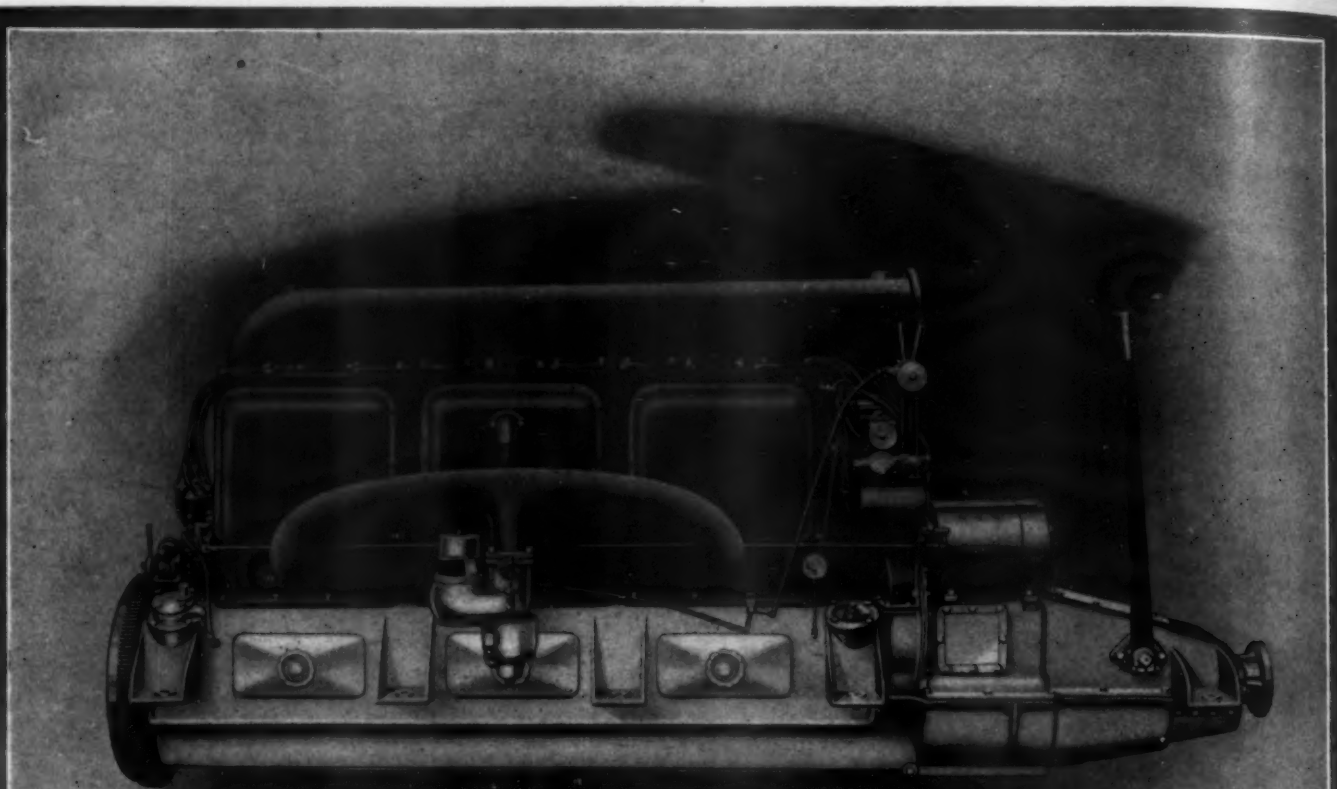
NEWARK, N. J.



DIXIE

20th Century
MAGNETO





MAGNALITE PISTONS

The Largest Aluminum Alloy Pistons

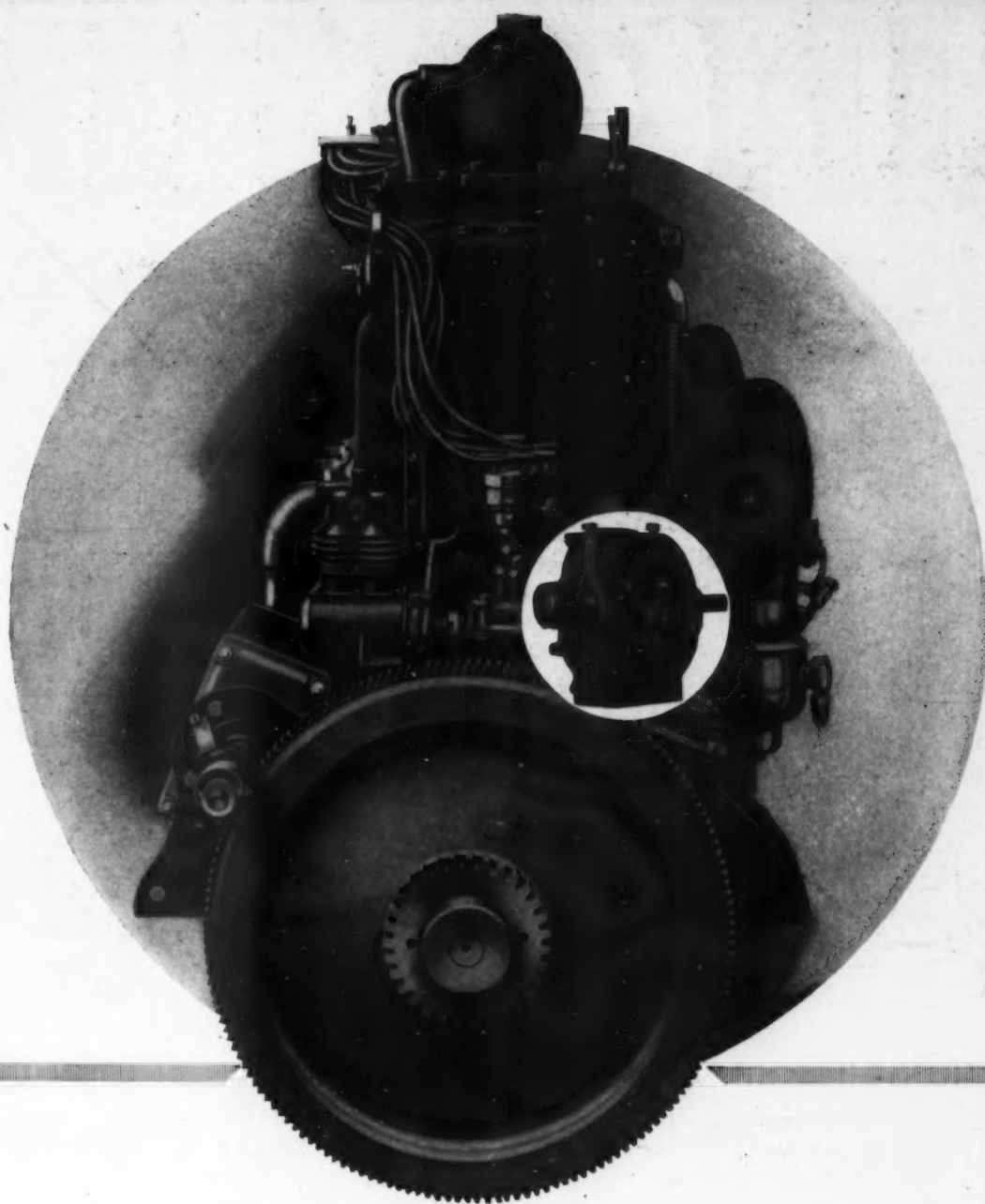
The largest aluminum alloy pistons in general use to-day are found in the eight-cylinder 280-360 H.P. Duesenberg Marine Engine. This piston has a diameter of $6\frac{3}{4}$ inches.

Every Duesenberg Marine Engine in service to-day is using "Magnalite" pistons. Not a single instance of piston trouble has developed, despite the rigid service to which Duesenberg Engines have been put in American and Foreign Government Service.

Not only is every Duesenberg Marine Engine equipped with "Magnalite" pistons but every Duesenberg Airplane Engine and every Duesenberg Automobile Engine is likewise equipped with "Magnalite" pistons.

A special booklet has been prepared describing "Magnalite" Aluminum Alloy Pistons, also supplying some very interesting data pertaining to Aluminum Alloy Pistons in general—a copy will gladly be mailed on your request.

WALKER M. LEVETT COMPANY - 417-419-421 East 23rd St., New York City
The Pioneer Aluminum Alloy Piston Manufacturer



Just a Small Gasoline Pump

One of the smallest pieces of equipment on this big 280-360 H.P. eight-cylinder Duesenberg Marine Engine is the Trimount Rotary Gasoline Pump,—but how important!

This little pump has to supply gasoline from the main supply tanks to the smaller service fuel tank. The pump rotates at a high rate of speed every second the engine is in operation. It has to attend to its job hour in and hour out, day in and day out. It is so small a part of the equipment that it scarcely ever gets any attention from the engineer, but it still goes ahead and supplies the food for the big unit of which it is a part.

This is but one example of what Trimount Rotary Pumps are doing in actual service. Trimount Rotary Pumps, in various sizes, are in all kinds of service where consistent pumping work is required.

We have prepared a booklet that describes and illustrates some of these pumps—write for a copy to-day, you will find it interesting.

TRIMOUNT ROTARY POWER CO.

20 HEATH STREET

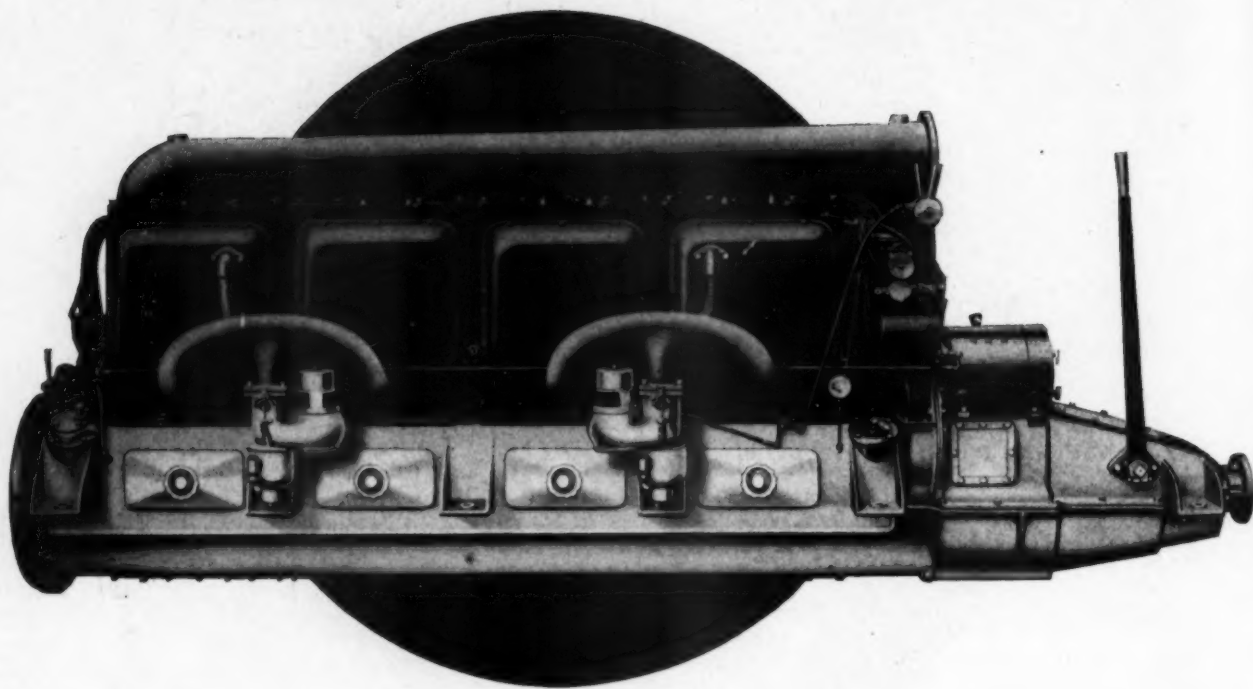
Factory: Whiting Ave., East Dedham, Mass.

BOSTON, MASS.

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RING TRUE

BEARINGS



Duesenberg Marine Engines use "Ring-True" bearings exclusively. All connecting rod and crankshaft bearings on these engines are "Ring-True."

The selection of a bearing for engines of the size of the Duesenberg was a difficult problem. An ordinary commercial bearing was not to be considered. The work to be done was out of the ordinary, the strains to be withstood were excessive.

Exhaustive experiments by the Duesenberg Engineers proved that "Ring-True" bearings came up to their requirements.

The service rendered by these bearings in actual use has borne out the wisdom of their choice.

General Aluminum & Brass Mfg. Co., Detroit, Mich.

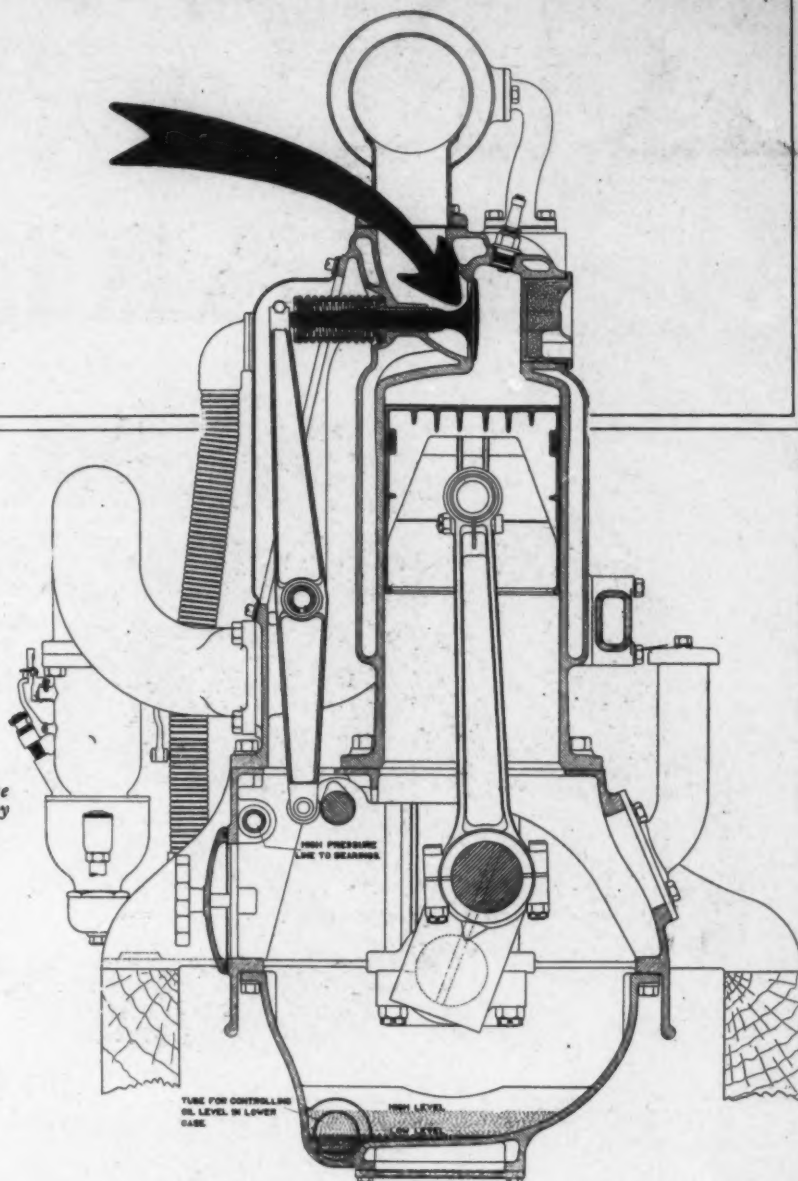
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IN USE TO-DAY

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RICH Tungsten Valves

This sectional drawing shows the valve action of the Duesenberg motor and many other interesting details of its design.



The Duesenberg Motors Corporation has followed the lead of practically every prominent building of marine, automobile or aviation motors in America by adopting Rich Tungsten Valves exclusively.

Since their introduction a few years ago, millions of these valves have been used and today they are universally recognized as the most efficient valves ever made.

In a high power, high speed marine or aviation motor the valves are subjected to an intense degree of heat. Almost constantly surrounded by burning gases, each valve opening and closing ten to fifteen times a

second, the heat and strain is so severe that no ordinary metal could withstand it.

The marked characteristic of Rich Tungsten Valves is that they retain their compression-tight seating longer and under more severe conditions than valves made of any other metal. Even should they become red-hot, their strength, stiffness and hardness is not impaired. They prevent loss of compression, loss of power and waste of fuel.

The value of Rich Tungsten Valves has been demonstrated beyond question. Be sure you get them in the next motor you buy.

RICH TOOL COMPANY

513 Railway Exchange

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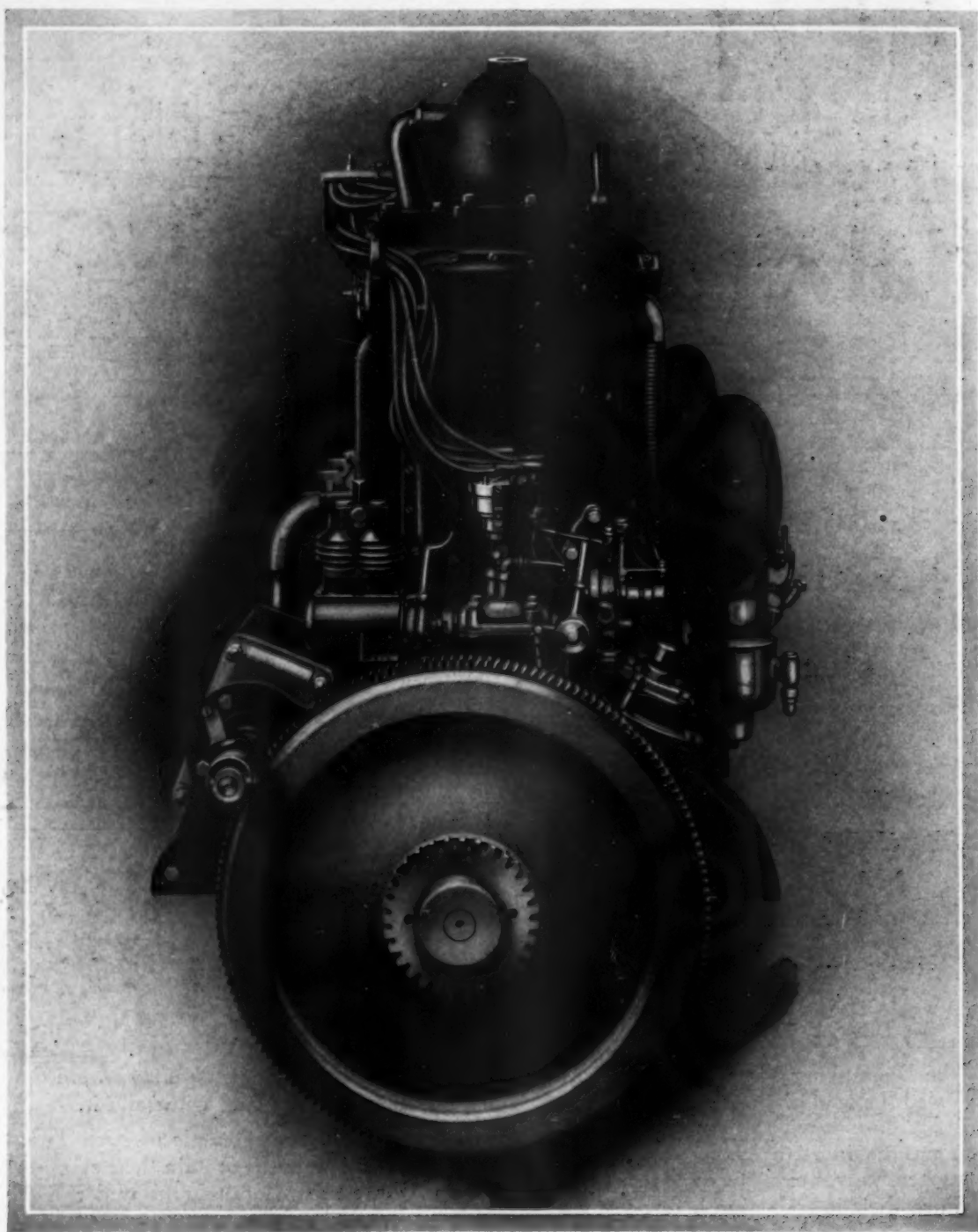
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DROP FORGINGS!!!

This is an age of special metals, special methods. Science has stepped in and taken much of the "guess work" out of engine designing to-day.

Particularly has Science devoted its attention to Drop Forgings, for Drop Forgings make up the very backbone of the engine. Science has evolved new and highly efficient metals, metals that will do certain things much better than they have ever been done before. Gross weight in metal has given way to lithe strength.

In engines of the type designed and built by the Duesenberg Motors Corporation, the matter of Drop

Forgings is a vital one. In these engines is generated tremendous power at high speeds. In these engines the element of weight is a serious one to consider. This means a careful selection of metals, then an equally careful forging of these metals into the different component parts of the engine.

That Wyman-Gordon Drop Forgings are used in Duesenberg Marine Engines is but further proof of the fact that the Wyman-Gordon product is scientifically and mechanically as near perfection as is obtainable. Quality and uniformity guaranteed.

Crankshafts A Specialty

WYMAN-GORDON COMPANY

**WORCESTER, MASS.
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THERE IS
MORE POWER
 IN THAT
Good Gulf Gasoline
 AND
Supreme Auto Oil

MANUFACTURED BY
GULF REFINING COMPANY

The Largest Independent Refining Company in the World

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The WRIGHT Engine
 for Your Boat
KEROSENE

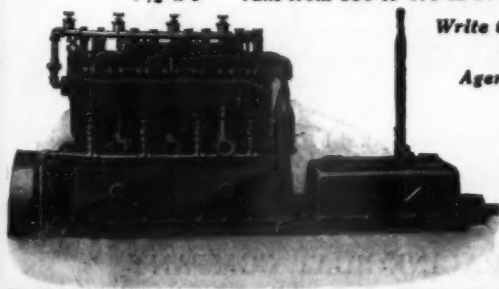
The ultimate solution of the fuel problem. Saves *more than half* of fuel expense, without sacrificing flexibility, power or reliability.

The Wright Kerosene Engine is thoroughly perfected. The kerosene is perfectly *gasified* before it enters the cylinders. It burns clean, free from carbon or lubricating troubles. No smoke or odor in exhaust.

Valves in cylinder heads. Make and break ignition. Bosch Low Tension Magneto

3-Cyl. 6 x 7 1/2", 22-30 H.P.
 3-Cyl. 7 1/2 x 9 " , 35-45 H.P.
 4-Cyl. 6 x 7 1/2", 30-40 H.P.
 4-Cyl. 7 1/2 x 9 " , 45-60 H.P.
 6-Cyl. 6 x 7 1/2", 45-65 H.P.
 6-Cyl. 7 1/2 x 9 " , 70-90 H.P.

6 x 7 1/2" runs from 400 to 550 R. P. M.
 7 1/2 x 9 " runs from 350 to 475 R. P. M.



Four-Cylinder Kerosene Engine

Write to-day for full details.

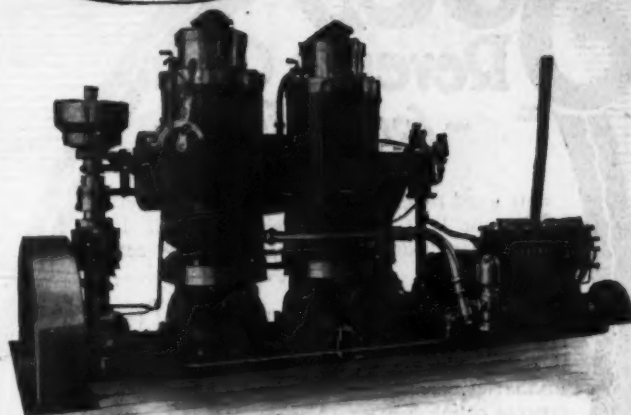
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**WRIGHT
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Kahlenberg HEAVY DUTY
 CRUDE OIL ENGINES



Positive Governor Control from no load to full load. Will run idle any length of time and pick up full load instantly without losing a single impulse.

You carry only one kind of fuel (crude oil) which is used for starting and operating.

Built in sizes 60 H. P. and up.
 Send for descriptive circular today.

Kahlenberg Standard engines in medium and heavy duty types are made in sizes from 2 to 54 H.P. and we would strongly recommend them for operating on KEROSENE, SOLAR OIL and GAS OIL. You ought to know more of the exclusive advantages the KAHLENBERG offers you. "Send for catalog."

Write today for full details.

KAHLENBERG BROS. CO., Manufacturers
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Miller
 The Motor of
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Dollar for dollar we believe you will get more honest service and satisfaction out of a Miller Engine than from any other marine engine you can buy. Simply because it's a thoroughly good four-cycle engine—properly designed and carefully built—at a common-sense price.

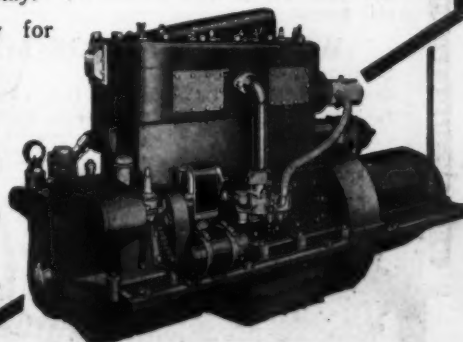
Nothing fancy about the Miller, nothing cheap, nothing experimental, nothing questionable. Every feature is based on our 15 years' experience. Low in price, compared with some others, but built to last because we are in business to stay.

Write today for latest catalog.

Eighteen Models
 4 to 65 H.P.
 Medium Duty
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Also Portable Row-
 boat Motors 1 and
 2 cylinders.

**Miller Engine
 Company**
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 CHICAGO



Joe's

Reverse Gear

- for Safety -

Any good reverse gear means greater safety for your boat than no reverse at all, but Joe's Gear means the *highest degree of safety* for it is the surest, most dependable gear made.

Joe's Gears are made for all sizes and types of boats—strong, light weight gears for small boats and big, tremendously strong gears for heavy auxiliaries, cruisers and commercial boats. *High reverse ratio.*

Joe's Positive Neutral One-Way Clutches supreme for high speed motors. Joe's Safety Rear Starter takes all the risk out of engine starting. Adjustable frame or bulkhead bracket.

Low Price One-Way Clutches for fishermen, etc.

Write today for complete catalog.

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Agents: J. King & Co., 16 Church Row, London, E. London, Eng.; L. H. Crookes Co., Seattle, Wash.; W. C. Diabrow, Jr., 71 Cortland St., New York City; Wood, Villanov & Lonsdale, Vancouver, B. C.; Fife Motor & Yacht Co., Montreal, Canada; A. B. Williams Mch. Co., Toronto; W. D. Foreman, 1425 Madison Ave., Chicago.




POWER

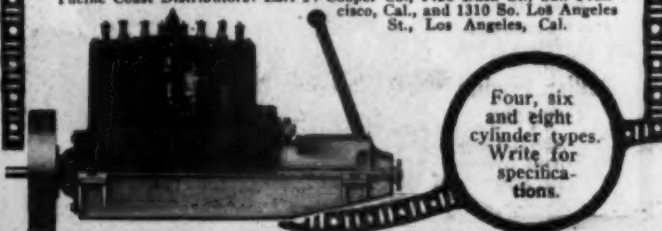
Wisconsin Motors are known for their ability to get maximum power out of every gallon of gasoline. Quiet, smooth running, light and compact, they are the product of the highest type of engineering skill.

Wisconsin Motors

for marine use contain those same qualities that have made Wisconsin Racing Motors champions of the world on road and speedway. If it's a Wisconsin it's a consistently dependable motor.

WISCONSIN MOTOR MFG. CO.

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Four, six and eight cylinder types. Write for specifications.

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USE MoToR Boating

For efficiency in marine advertising—

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Advertisers who check returns closely report that MoToR Boating produces more business than any other publication. If you have anything that appeals to owners or builders of boats and marine engines, MoToR Boating will do the same for you.

IT IS HIGH TIME TO SELECT YOUR MOTOR BOAT FOR THE COMING SEASON



YOU WILL, OF COURSE,
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Racine Wis
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MOTOR BOAT

Racine Wis boats are backed by 21 years of boat building skill and experience.

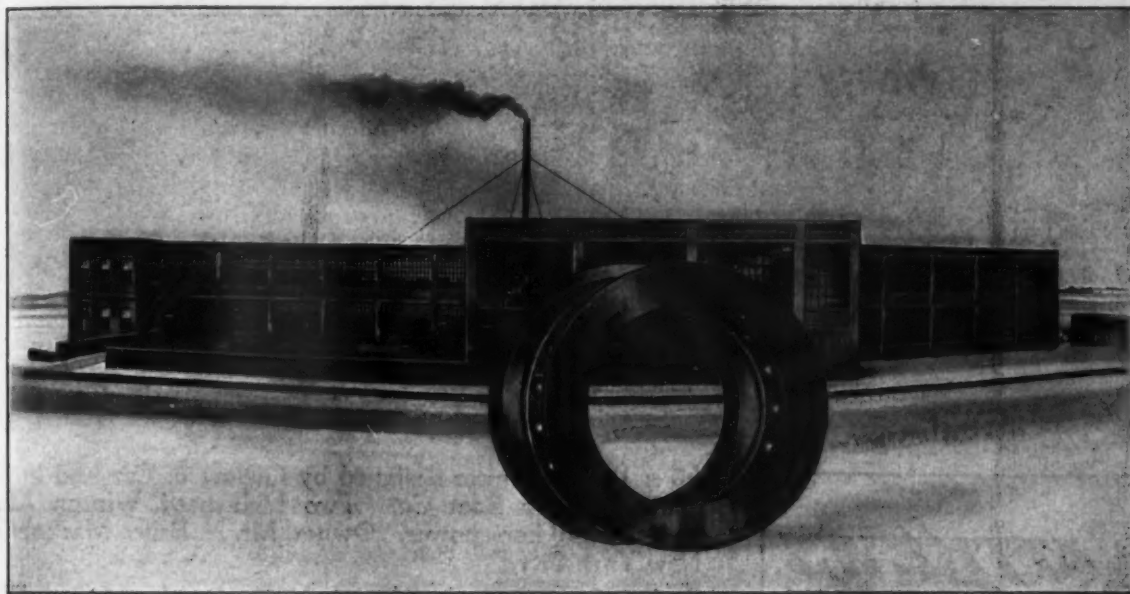
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THE BANTAM BALL BEARING CO.
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King of Marine Carburetors

KINGSTON
THE WORLD'S
MOST POPULAR
CARBURETOR

The Kingston is today the world's most popular carburetor.

So far as we know we are now producing more carburetors than any other manufacturer in this line, and this is not the time of year for our maximum production.

The demand is keeping our plant busy night and day,—and we are the largest carburetor manufacturers in the world.

There is a real reason for Kingston popularity. It is the all-around efficiency of the Kingston Carburetor.

Used on automobiles, marine engines, tractors, motor cycles and for general gas engine work.

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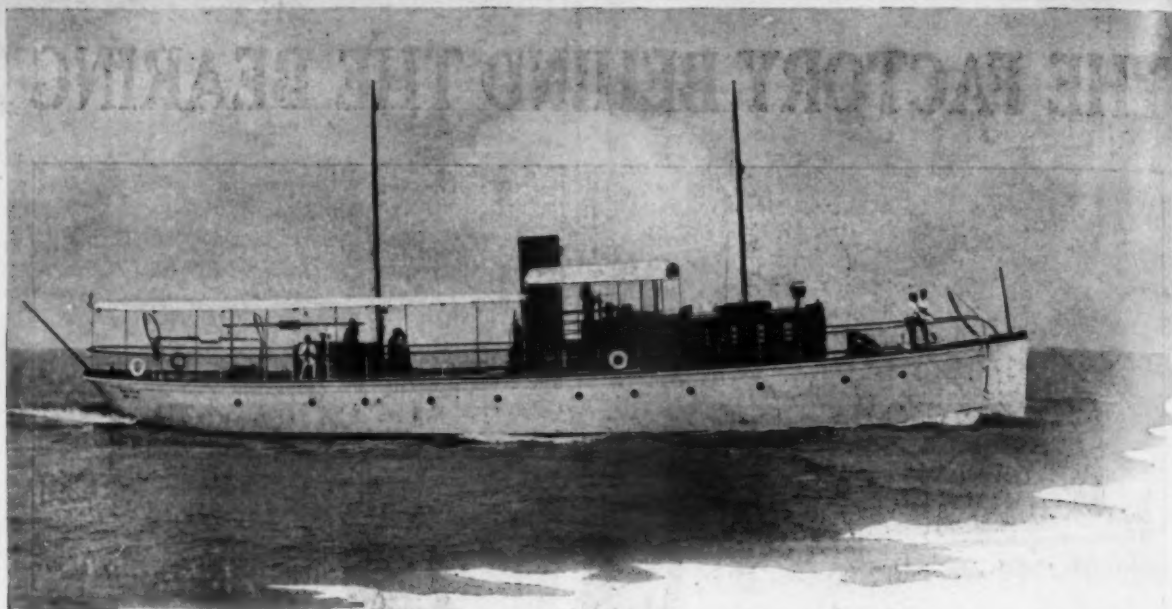
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90 x 16 foot cruiser designed by Gielow & Orr and built by The Matthews Boat Co. Two high-speed Winton Marine engines, 330 horsepower. Owner, Mr. N. Bruce Mackelvie, of New York City.

Sachem is an unusual yacht, combining speed, comfort and seaworthiness. See a Matthews craft before you place your order.

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MARINE RAILWAYS, STORAGE BASIN AND WORKS

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Red Wing Thorobred
THE MOTOR WITH POWER TO SPARE



Unit Power Plant Model "F" THOROBRED
28-36 H.P., 4 1/16 x 5"
Furnished with or without Unit Power Plant

What Is Real Economy?

A business man wouldn't think of getting out his mail with a lead pencil to save the cost of a typewriter; he wouldn't be without a telephone because he could send his messages by carrier. Real economy, after all, is making use of the labor, time and cost saving inventions of the age.

That's why a Red Wing Thorobred Marine Motor typifies REAL ECONOMY. It saves labor because it is "there" with all the power you want ALL the time; it saves time because it has the speed and endurance for any use and spends no time in repair shops; it saves money because with our modern plant and large facilities every part of it is quantity as well as quality production—and you can buy the Thorobred for less money than an inferior motor will cost you.

The Thorobred comes in five sizes, 14 to 40 H.P., and with any style of modern equipment desired. We manufacture 2-cycle motors, too,—from 3 H.P. up.

The Thorobred also burns kerosene for fuel, if desired.
Ask for Thorobred Details Today.

RED WING MOTOR CO.

Dept. B,

Red Wing, Minn.,

U. S. A.

20th CENTURY Gasoline Motors

2-Cylinder—6 1/2" x 8 1/2"—15-20 H.P.—400 R.P.M.
4-Cylinder—6 1/2" x 8 1/2"—40-50 H.P.—400 R.P.M.
6-Cylinder—6 1/2" x 8 1/2"—65-75 H.P.—400 R.P.M.

Strictly high grade four-cycle engines, built for heavy duty service.



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NEW YORK YACHT, LAUNCH & ENGINE CO.

:: Morris Heights, New York City

Winter's Successor to the Motor Boat

AERO-SLED



When the lakes and rivers are frozen over and your boat is stored away for the winter, just try winter's successor to motor boating—Aero-Sledding.

The Aero-Sled is steered like an automobile. It has cushioned seats and is built for comfort and safety at high speeds. You'll find it the King of Winter Sports, equalling skating, skiing, tobogganing and ice-yachting at their best. It has an attraction all its own.

Speeds of Ten to Fifty Miles per Hour

The speed you can get with an Aero-Sled is almost unbelievable. On smooth ice you can glide along at the rate of 50 miles an hour, or slow down to 10 miles if you wish. The ice-yacht, like the sail boat, is becalmed when there's no wind. But the Aero-Sled, like the motor boat, is always ready to go.

The Aero-Sled is equipped with the famous Aerothrust engine,—the greatest little outboard marine motor on the market today. You can use the same motor on your Aero-Sled in winter, and on your row boat in summer.

Let us tell you more about the Aero-Sled and the Aerothrust motor. Write today for details and prices.



Aerothrust

AEROTHRUST ENGINE CO., 50 Madison Street, La Porte, Indiana
Foreign Distributors, **SCRIPPS MOTOR CO., 17 Battery Place, N. Y.**

A FORCED SALE

of a thoroughly established

MOTOR ENGINE BUSINESS

including drawings, patterns, tools, jigs, equipment for new and old lines and a number of engines already built and in process—both marine and stationary, gasoline and Kerosene types.

A Manufacturer being overloaded with other business has decided to discontinue making Jager Engines and an opportunity is, therefore, offered for some one to step into a large and growing business, of long standing, manufacturing a great variety of heavy duty, medium duty and high speed engines; including machines for electric lighting, air compressing and hoisting.

A large market is now available for all these lines and the business can be largely increased by parties who can give it the personal supervision that cannot be given by the present owners.

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Thousands of men and women are now employed in this new business. 110,000 men will be attached to the United States Aviation Corps.

Get in touch with this tremendous new Industry by reading *FLYING*, which for over six years has been the foremost aeronautical magazine published in America.

Twenty-five Cents a Copy
At All Newsstands

FLYING ASSOCIATION
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Making Fuel Go Farther



There are two ways you can meet the National Government's demand for fuel conservation.

One is to use your boat less. The other and pleasanter way is to make fuel go farther by installing

McQUAY-NORRIS LEAK-PROOF PISTON RINGS

Probably you don't realize how much gas is wasted by old piston rings. Wear aggravates their unequal tension, destroys their spring so that they leak compression and lose power at every stroke. You can't see the leakage, but it amounts to a lot in the course of a season.

By using McQuay-Norris *Leak-Proof* Piston Rings you will be sure of utilizing every particle of power contained in every drop of gasoline. They are wonderfully flexible and close fitting rings. Have absolutely even bearing upon the cylinder at every point, yet with so light a tension as not to cause unnecessary friction loss. They will pay for themselves in a short time out of the gas and oil they save.

Wherever you are,—whenever you need new piston rings, you can get Genuine McQuay-Norris *Leak-Proof* in exact size for your motor—any make or model. Standard and over-size rings in all widths and diameters immediately procurable, ready for installation at once.

All garage and repair men install them. Complete service stocks carried by 300 jobbing and supply houses all over the country.

WE'LL BE GLAD TO SEND YOU

booklet "To Have and to Hold Power." It tells all about piston rings, why they vitally concern fuel consumption and why McQuay-Norris *Leak-Proof* are superior to all other makes. Write Dept. B.

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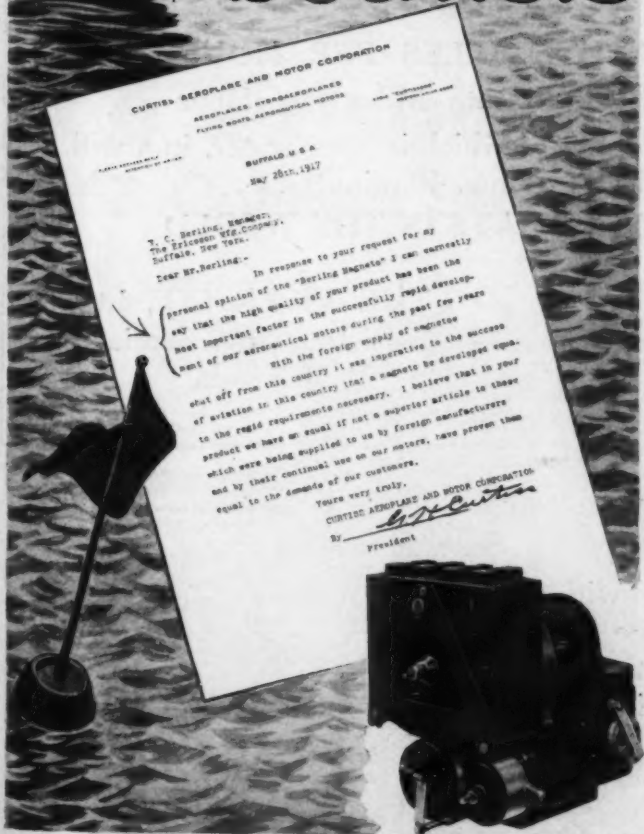
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What this sky-master says of the Berling Magneto echoes the experience of motor- boatists



ERICSSON MFG. CO.
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SPEEDWAY Express Cruiser

For reason of the number already built it has conclusively proven to be the most desirable stock cruiser ever conceived. A fifty-two foot cruiser of modern design, superior workmanship, equipped with the thorough completeness which is characteristic of these shops. The arrangement provides comfortable accommodations for a party of eight persons exclusive of a crew of two men. The speed is as high as is consistent with economical operation.

With one Model M, 130 H.P. Speedway Motor the speed attained is 17.87 miles. Two similar engines ensure a cruising speed of 24.24 miles.

An interesting development of the Fifty-Two foot Cruiser is the twin screw 8-cylinder, 60-foot model, which has a speed slightly in excess of 25 miles.

Deliveries of the Fifty-Two foot boats can be made in ten weeks. The larger models require a few weeks more for completion. A few will be ready for Southern cruising. Prices subject to quotation.

An excellent, slightly used, fifty-two foot model is available for immediate delivery.

Speedway

GAS ENGINE & POWER CO.
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CHARLES L. SEABURY & CO.
CONSOLIDATED
Dept. E Morris Heights New York City

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SEA SLED

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VIPER SEA SLED

HICKMAN PATENTS

**Latest Type Sea Sleds for Aviation Division, United States Army**

Able, seaworthy boats, designed for rescue work in open water.

Length, 28 feet. Weight on trials, 7800 pounds.

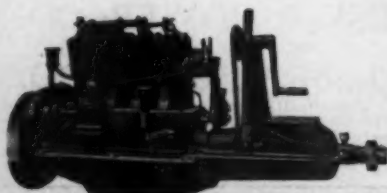
Two six-cylinder 6" x 6" engines

GUARANTEED SPEED, 35 STATUTE MILES PER HOUR**Speed Shown on Official Trials, 43.54 Statute Miles Per Hour**

Run from Gloucester to Boston, 28 miles, 18 miles of which is open water, in a stiff chop. Army officials aboard. Revolutions, 1200. Time, 48 minutes.

INCOMPARABLY THE FINEST SEA BOATS IN THE WORLD**MURRAY & TREGURTHA CO.**340 West First Street
South Boston, Mass.**THE VIPER CO., Ltd.**Pictou, Nova Scotia
Canada**THE 1918 UNIVERSAL**

Has all the attractive features of the 1917 model with a few refinements. It is the ideal motor for one class racers. Just as suitable for work boats or for trolling. Get Bulletin No. 25 and learn the features of this popular motor.

**Universal Motor Co.**

Oshkosh, Wis.





Rain or Shine, It's "The Friendly Motor"

It was indeed a happy thought when the first man called the Frisbie a "friendly motor." For he expressed in two words all that we could convey to your mind in a hundred page catalogue. He epitomized a thousand letters from Frisbie owners. He must have owned a Frisbie motor himself.

The Frisbie is not a fancy motor. It is built for substantial cruisers and work boats. It is adapted for the average man's boat, the comfortable type of boat that will go anywhere and back again—that may be entered in a few club races but is designed for general use, with ample accommodations and good sea qualities.

The Frisbie is not a racing motor. It doesn't pretend to compete with the splendid high-speed racing creations which are usually installed in special hulls, with the breaking of a certain record in view.

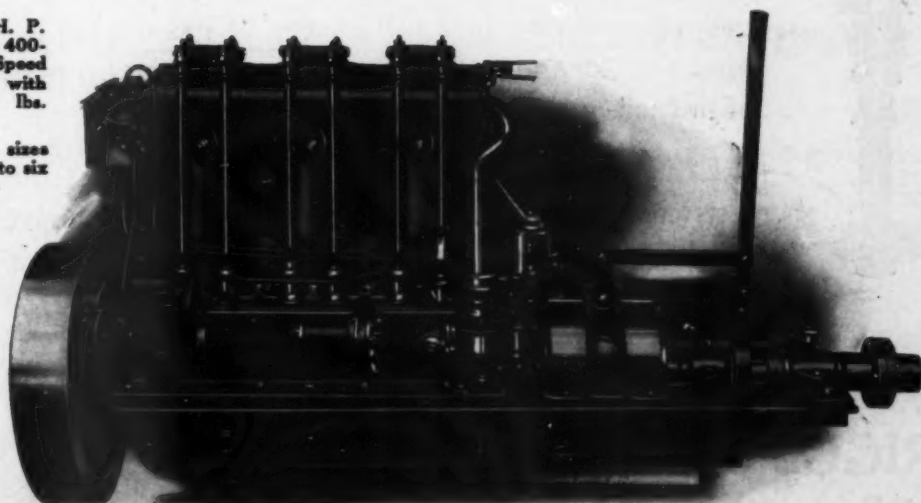
Nevertheless the Frisbie has hung up an enviable racing record. Simply because its reliability outruns most other motors, and its great efficiency gives the Frisbie-powered boat a big advantage after the handicaps are figured.

When you buy a motor make a careful investigation of the Frisbie record. Let us put you in touch with some Frisbie owners. We are anxious for you to know just why the Frisbie is "the friendly motor". Write for a catalog.

The Frisbie Motor Company 7 College Street, Middletown, Conn.

Three Cylinder, 18-25 H. P.
Bore 6", Stroke 6", Speed 400-
550 R. P. M. Minimum Speed
150 R. P. M. Weight with
Reverse Gear, 1050 lbs.
Length, 65½ in.

Other Frisbie motors in sizes
from 3 to 75 H. P., one to six
cylinders.

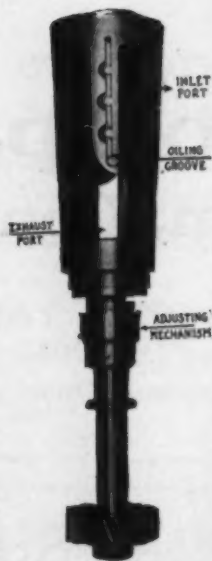


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SILENCE in the operation of a Marine Engine means more than the elimination of the annoyance of clattering poppet valves.

In the SILENT VALVE-DRIGGS Marine Engine it means—



MAXIMUM power **Minimum** wear

MAXIMUM speed **Minimum** lost energy

MAXIMUM life **Minimum** operating expenses

The efficiency of a motor in power, speed and economy depends to a large extent upon the ability of the valves to take in a full charge of gas during the intake stroke and to completely scavenge the cylinder of burned, inert gas during the exhaust stroke.

SILENT VALVE construction with the large unrestricted ports made possible, accomplish the above results with but one valve for each pair of cylinders.

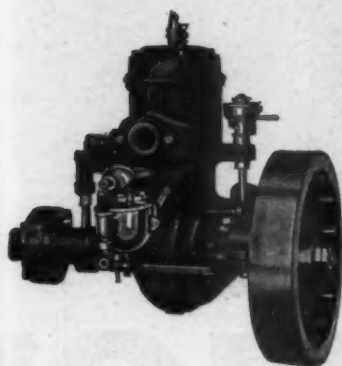
*Write for our illustrated catalogue.
It explains how this valve is made possible.*

DRIGGS ORDNANCE CO., Inc.

Dept. B

120 Broadway, New York





Consult a Specialist

About an Engine for Your Small Boat

For that new boat, you want an engine of just the right power, weight, size and speed to give you the exact kind of service required of it. Unless you already know what you need to secure the highest efficiency, *Don't Guess—Consult a Specialist Who Knows* what you need and can supply it.

You may already own an engine which is unreliable; maybe reliable, but too light or too heavy for your boat; or possibly it is unsuitable in other ways. *What's the Use of Having an Unsatisfactory Outfit?* Consult a specialist to find out what you need to get fixed up ship shape—and then get it.

Our eighteen years' concentrated effort and experience, studying and supplying the varied requirements of small boats, surely justify our calling ourselves specialists. Besides our 1917 line of Eagle Engines proves our claim.

CONSULTATION, ADVICE AND LITERATURE ABSOLUTELY FREE.

We do not supply engines without charge, but we do give you the best possible value for your money in every Eagle Engine you buy.

Send for new catalog today.

THE STANDARD COMPANY

Torrington, Conn., U. S. A.



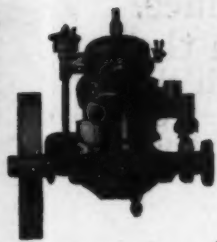
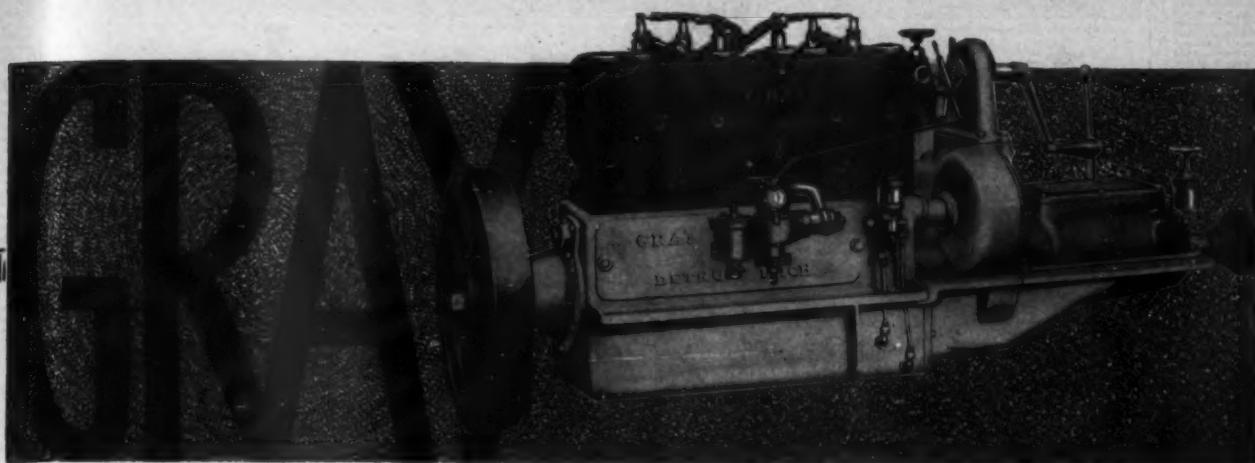
Champion

Toledo

Dependable Spark Plugs

Make sure of the best results from your boat by getting the spark plugs with the name *Champion on the porcelain*. This will avoid substitutes. Champion two-piece Heavy Stone, \$1.25.

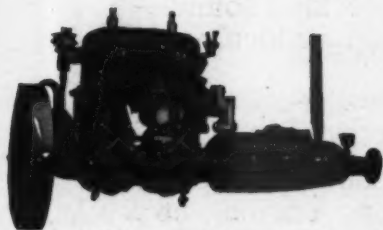
Champion Spark Plug Company
Toledo Ohio



3 H.P.-5½ H.P.

The Gray Motor Co. are the Largest Builders of Small Marine Motors in the World

There's a "Gray for Every Boat"



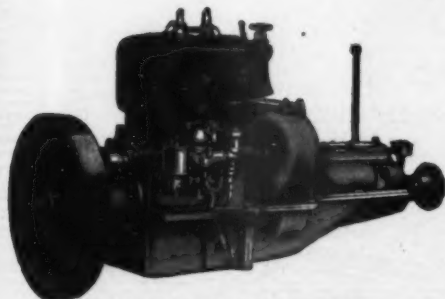
6 H.P. and 11 H.P., Model M

Two Cycle

- 3 H.P. . . . one cylinder
- 5½ H.P. . . . one cylinder
- 6 H.P. . . . two cylinder
- 11 H.P. . . . two cylinder

Four Cycle

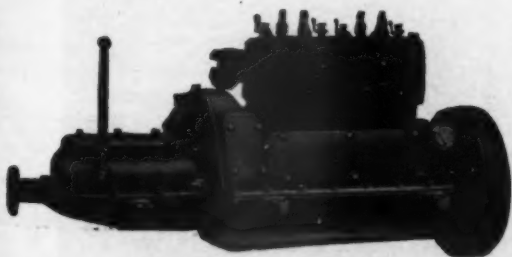
- 10-12 H.P. 2 cylinders en bloc
- 20-24 H.P., 4 cyl. . . . 2 cylinders en bloc
- 12-15 H.P., 4 cyl. . . . 4 cylinders en bloc
- 40 H.P., 4 cyl. . . . 2 cylinders en bloc



Model D—Built in 2 and 4 cylinders

Delivery Now—To-Day

Select your Engine from the Big Gray Marine Catalog, sent promptly upon request. We are making immediate deliveries. Also ask for our catalog of 360 Boat Builders' Boats. Order at once. Price advances October 1st.




Model F—Gray's Sales Leader

Standard the World Over

We have been in the Marine Engine Business for 21 years. We constantly strive for increased efficiency and better Motors, and as a result Gray Marine Motors are standard the world over.

GRAY MOTOR CO.

1036 OAKLAND AVENUE
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JOHNSON'S GUARANTEED CARBON REMOVER

IS A HARMLESS LIQUID, to be poured into the cylinders of gasoline and kerosene engines. It softens the carbon and releases it from the metal. It then burns, powders and is blown out through the exhaust. Five minutes' time and no labor required. You will save from \$3.00 to \$5.00 over any other method, without loss of time and with very much better results.

Put New Life In Your Engine

A dose of Johnson's Carbon Remover—the engine laxative—will increase the power of your boat—stop that knocking sound—prevent pre-ignition—quiet your motor and reduce your gasoline consumption from 12% to 25%.

For Automobiles and Motorcycles

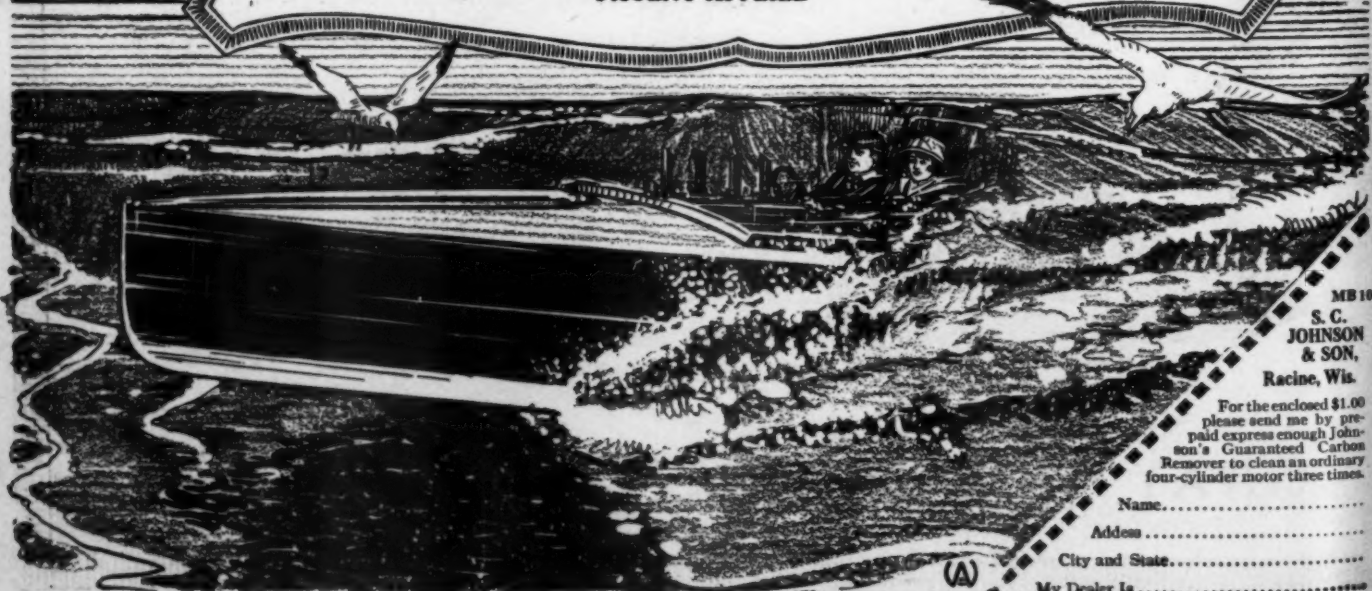
Johnson's Carbon Remover is splendid for gasoline engines of all kinds—automobiles, motorcycles, stationary engines, etc. Also fine for cleaning spark plugs. Johnson's Carbon Remover cures 80% of engine troubles.

Special Offer

If your dealer cannot supply you with Johnson's Carbon Remover send us \$1.00 and we will forward you enough to thoroughly clean an ordinary four-cylinder motor three times. Use attached coupon.

S. C. Johnson & Son, Dept. MB10, Racine, Wis.

PATENT APPLIED



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For the enclosed \$1.00 please send me by pre-paid express enough Johnson's Guaranteed Carbon Remover to clean an ordinary four-cylinder motor three times.

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My Dealer Is.....

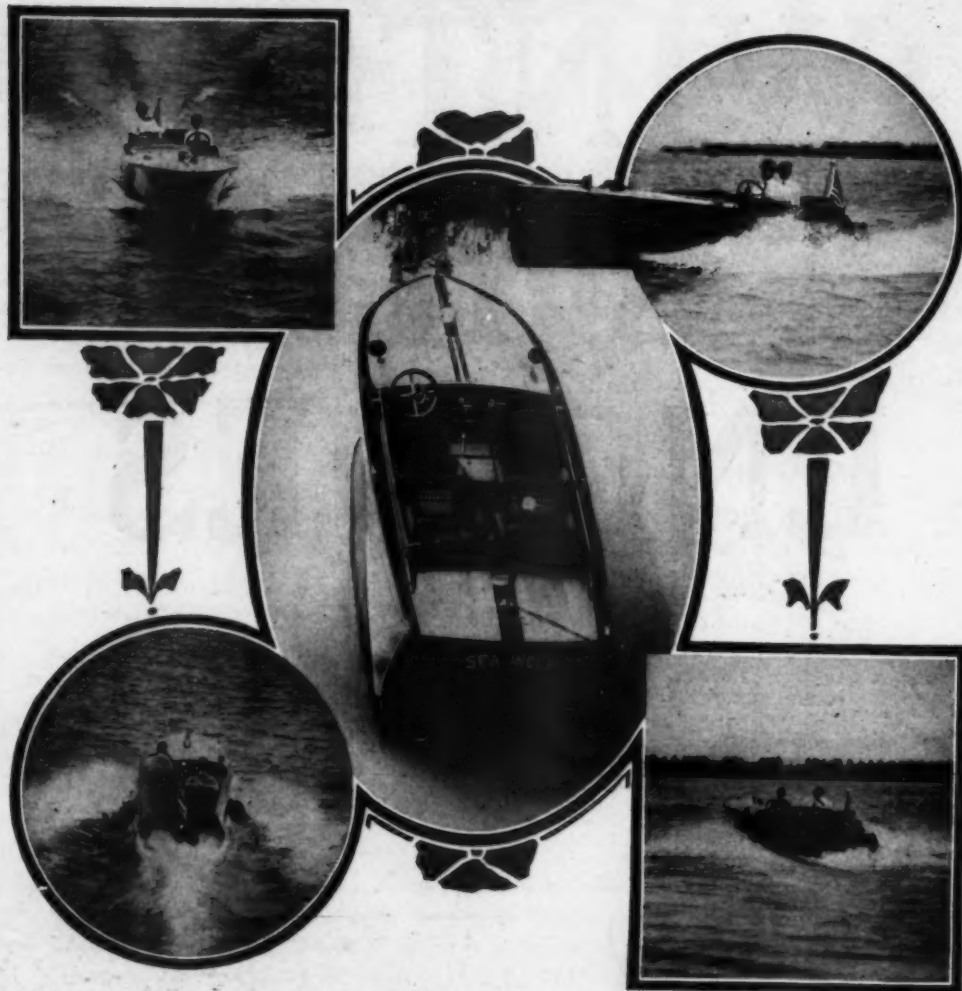
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Scripps



THE HACKER HYDROCAR

"STANDARDIZED"

Mr. John L. Hacker, the eminent naval architect, has torn a leaf from the experience of the automobile industry, by which the John L. Hacker Boat Company is henceforth committed to the policy of standardization and one design.

The result is an improved boat of unusual merit and exceptional value.

Deliveries have already begun but a limited number are still available for the approaching Florida season.

Mr. Hacker's clientele has always numbered those who are appreciative of the better things in the modern pleasure craft, and this spirit is reflected in the highest degree in the Hacker Hydrocar.

The boat is a marvel of beauty, comfort, completeness and richness of detail, embodying throughout the appointments of the highest class touring car.

Though but 25 ft. by 6, careful design allots the same cock-pit room ordinarily found in a 32 footer. As a consequence six passengers are seated with comfort.

The practice of standardization and an adherence to one stock model makes possible an initial price of \$2,000 f.o.b. Detroit on the completed boat ready for service. No extras other than top, which is optional.

Naturally a boat of this high character requires a power plant in keeping with the highest standards. After an investigation of many power plants, Mr. Hacker has selected the HB Series "B" all-enclosed SCRIPPS with starting and lighting system as standard equipment. Power in abundance, absolute quietness of operation, perfect cleanness and certainty of service are typical of this model.

Scripps Series "B" motors are made in medium duty and high speed models,—two, four and six cylinders, 10 H.P. to 125 H.P. Your catalog on request.

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Ever Try to Separate Two Panes of Glass?



HARD, wasn't it? That's because, as an engineer would say, every point on one of the surfaces is in contact with every point on the other surface. Add a little moisture to the surfaces and the feat is well nigh impossible.

Thus you see how the smoothly ground surface of the friction plates in Paragon Reverse Gears obtain their tremendous holding power. These plates are ground to a glass-like smoothness.

This, with the unusually large friction area, makes slipping on the forward drive almost unheard of in Paragons, when properly adjusted.

This great friction area enables your gear to take hold gradually, and when you have thrown your lever way into forward you can bet your last dollar that your motor will deliver every ounce of power to the propeller—where it belongs.

That's one reason why America's foremost marine engine builders depend on Paragons to uphold the prestige of their motors.

You can have a Paragon on that new motor of yours if you will ask for it—and it's well worth asking for—and insisting on.

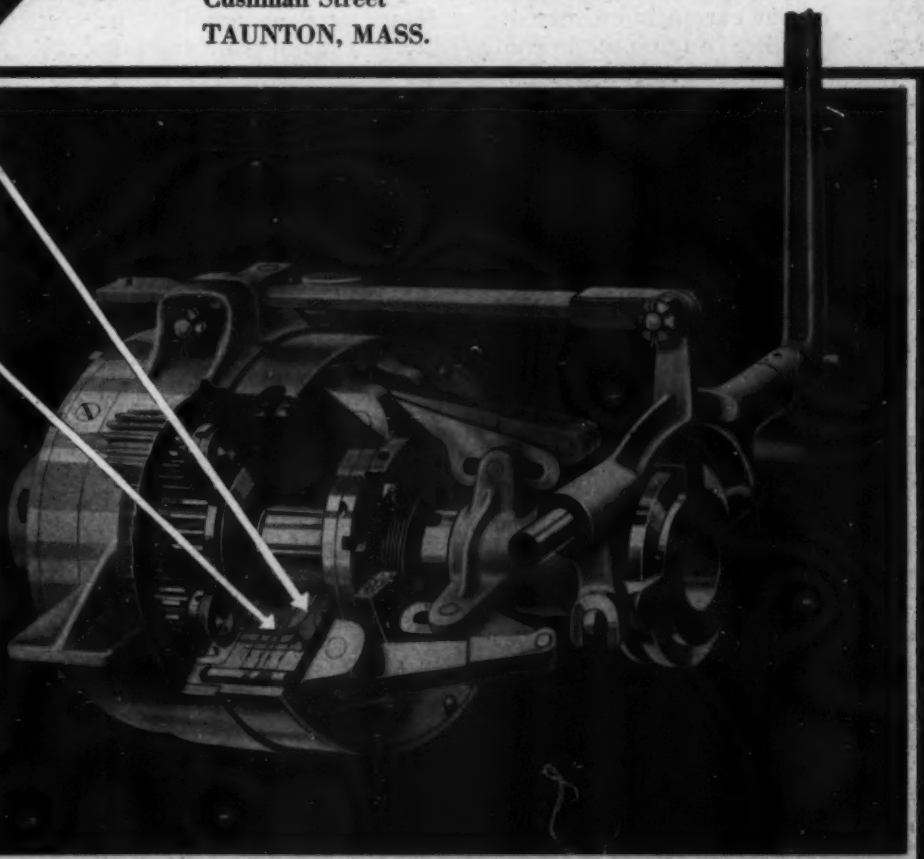
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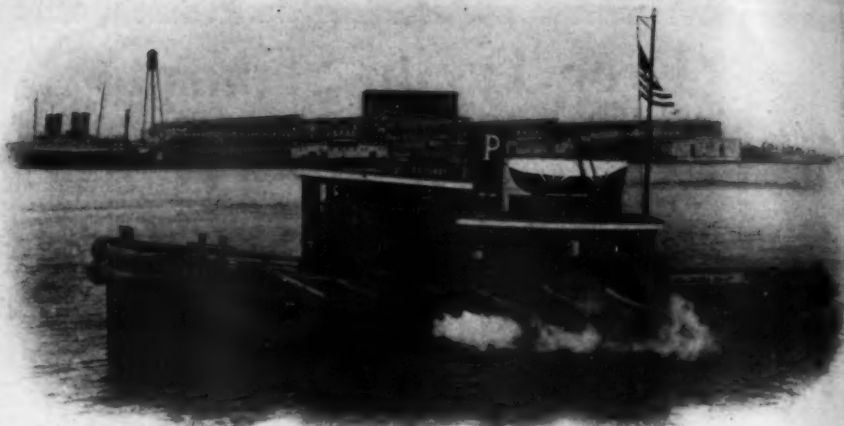
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\$12.00 Worth of Power for \$1.12

The motor tug "B. G. Purdy" of Boston, equipped with a GALUSHA GAS PRODUCER.



GALUSHA GAS PRODUCER

All standards of power cost and fuel economy for internal combustion marine and stationary engines are being revolutionized by the performances of Galusha Gas Producers.

Our standing claim that producer gas furnishes power at one-tenth the cost of gasoline or one-fourth the cost of steam, is more than conservative, as in a recent test the power cost was about one-eleventh the cost of gasoline or one-seventh the cost of steam.

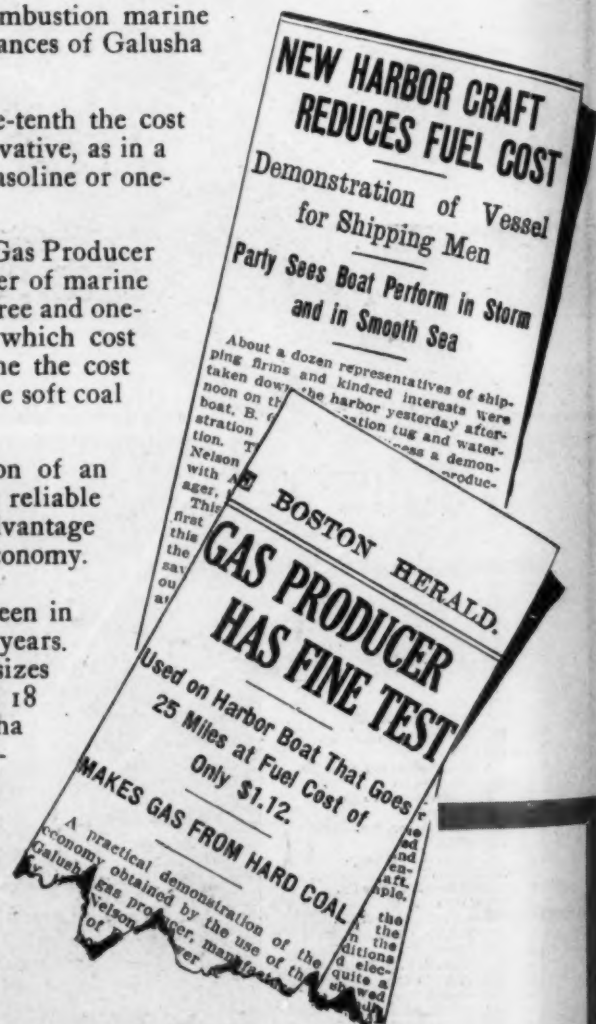
On July 27th, the tug "B. G. Purdy" equipped with a Galusha Gas Producer gave a demonstration in Boston Harbor, witnessed by a number of marine engineers, shipping representatives and newspaper men. In three and one-quarter hours the boat made 25 miles, using 280 lbs. of coal which cost \$1.12. It was carefully estimated that if operated on gasoline the cost would have been \$12.00, or if equipped with a steam plant the soft coal consumed would have cost \$9.00.

The performance and operation of an engine using producer gas is as reliable as when using gasoline. No advantage is sacrificed to secure the great economy.

Galusha Gas Producers have been in successful use for more than ten years.

They are made for all sizes of marine engines from 18 H. P. up. The Galusha requires only about one-fourth the space occupied by other gas producers.

If you are interested in minimum power cost, let us tell you all the facts about the Galusha Gas Producer. Write today for full data.



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HELMA'S LATEST VICTORY

"Old Trusty" as she is called, owes her success of the past two seasons to the consistent performance of her

FAY & BOWEN ENGINE

In the cruiser race of August 19th, 1916, Promoted by the Philadelphia Record, covering 54 nautical miles, Helma proved "13" her lucky number by winning the Kendrick Trophy for making the best time of any of the thirteen entries.

On July 2nd, 1917, Helma won the "Class A" Race of 43 nautical miles from Trenton, N. J. to Essington, Pa.

Again on Sept. 8th, 1917, Helma won the Kendrick Trophy time prize for 1917.

And again in the 51 nautical mile race for cruisers, the last of the season, held Sept. 15th, 1917, Helma demonstrated her ability by capturing the DuPont Trophy time prize, from a field of 12 competitors, and also won third place in the handicap.

Helma is 40 ft. x 9½ ft. and is powered with a four cylinder, four cycle Fay & Bowen Engine of 30-45 H.P.



If you want a thoroughly GOOD engine, you cannot go wrong on the selection of a Fay & Bowen. We also build complete power boats, independent electric lighting units, pumping sets, etc. "None Better Built."

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Helma—40'x9½' Cruiser.
30-45 H. P.

Fay & Bowen Engine.

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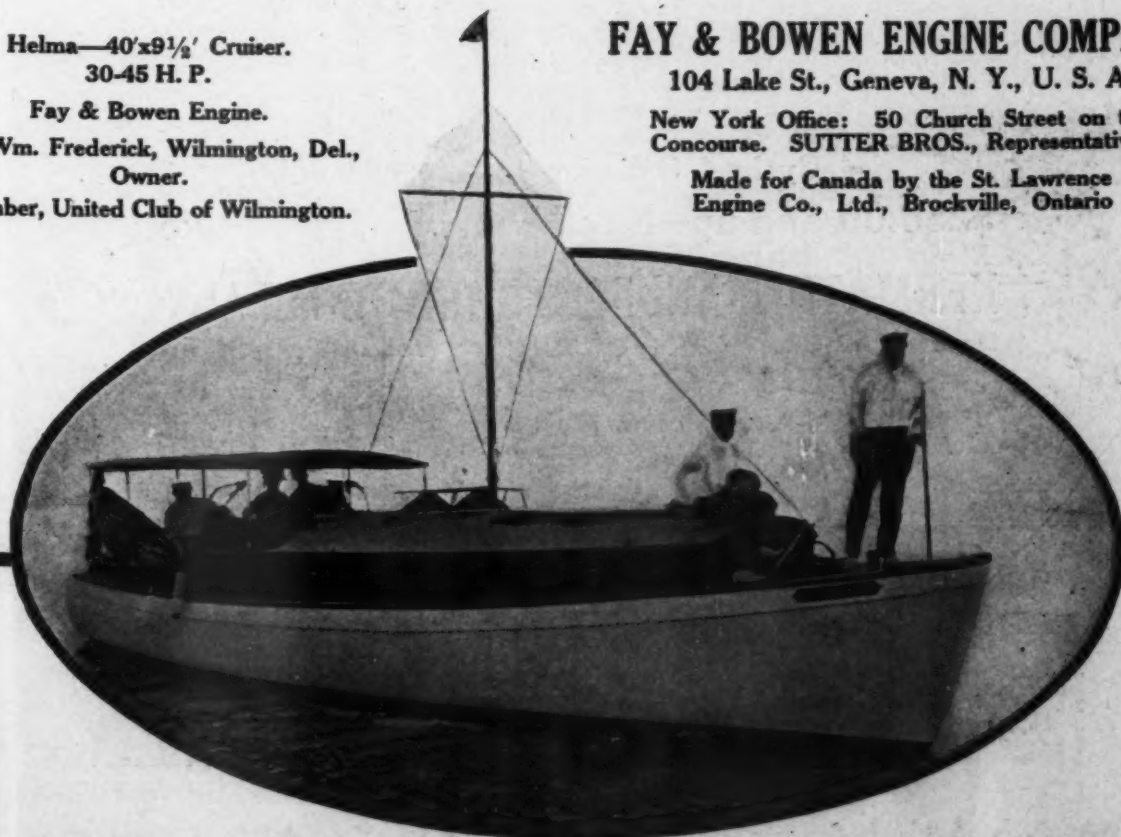
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America's Standard 4-Cycle Marine Motor

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Buy a good insurance policy for your family—

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Buy a Boat for yourself, keep your good health and fool everybody.

How many men of today are in fine physical condition?

They have built big businesses and lost their health doing it.

Now tell me—Where can you get the most for your time?

You cheat yourself to a couple of weeks, or a month at the best, and you've got to make the most of it.

An Auto Tour? Nix—too strenuous—too much dust in your lungs.

Golf? Good as far as it goes.

Atlantic City? You have to come home to get rested.

All right. Then it's back to the woods, a good summer cottage or camp, and a good boat.

Get out on the water and you know you're alive, without the strain of keeping alive. It's a relief, it's restful, it's enjoyable, just for that reason.

Now a little further on making yourself physically fit. Order a Kermath Engine put in that boat because it's an engine which will give you the limit of pleasure and prove a real comfort to you.

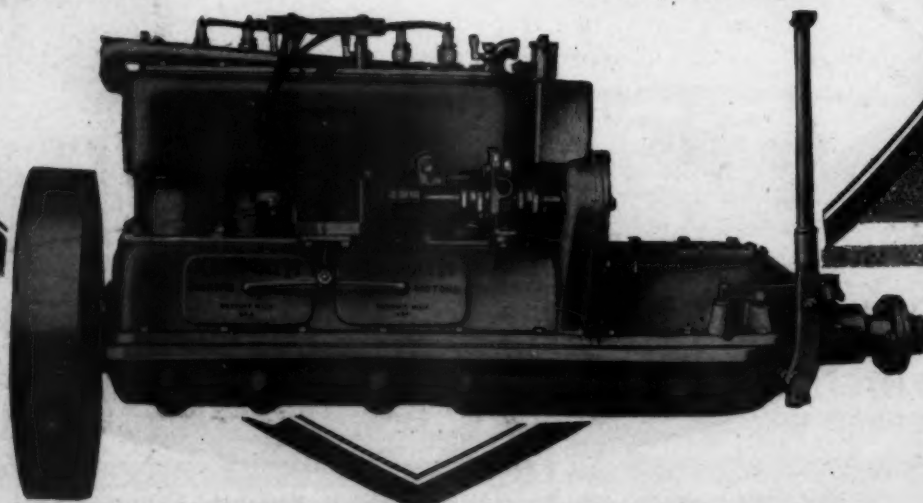
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An engine which starts without effort, speed at your finger tips, a consciousness of reserve power, the steady, constant purr of perfect mechanical adjustment—these are the things which give zest to motor boating.

You buy them with your Buffalo—these and the confidence that your engine will give steady, reliable power under all conditions.

Buffalos are built for men of mechanical discernment—for the "engine wise" who know that the whole difference between engines lies in the quality of every part, the nicety of construction and searching tests for each possible flaw. These men know good engines are not made by chance, that quality is

the result of careful planning plus honest workmanship plus experience.

For 17 years the builders of Buffalos have been striving to give boat owners the best that money can buy. The present Buffalo models embody all these years have taught them. These engines are dependable, they are silent as a motor car, they are economical in their fuel consumption. Buffalos never quit in a seaway, they are not balky in starting. They just spin along hour after hour with a droning hum of well-being, giving more power per dollar than other engines. Their upkeep cost is low because they are properly built. They are durable. In a word they stand the boat test—they make motor boating an unmixed pleasure.

"Buffalo"
The Engine of Contented Service.

There is a Buffalo suited to your boat. It is described in "The Buffalo Book" which will be sent free for the asking. It is our catalogue, but it is more than that. It tells all about the various Buffalo models—high speed, medium speed and slow speed—and shows a few of the boats which are powered with them. It contains blueprints explaining Buffalo construction. It shows why Buffalos are best for powering work boats, speed boats, runabouts, yachts and cruisers.

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